



บริษัท ซีเอ็นพีซีเอชเค (ไทยแลนด์) จำกัด

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม
โครงการผลิตปิโตรเลียมพื้นที่ผลิต L1/64 บึงหญ้า แปลงสำรวจบนบกหมายเลข L1/64 พื้นที่ผลิตบึงหญ้าตะวันตก-หนองสระ
และพื้นที่ผลิตบึงหญ้าตะวันตก-หนองสระส่วนขยาย แปลงสำรวจบนบกหมายเลข L21/43 จังหวัดสุโขทัย และจังหวัดกำแพงเพชร
ฉบับเดือนมกราคม - มิถุนายน พ.ศ.2567

ภาคผนวก ข.5

รายชื่อพนักงานในท้องถิ่น

ระยะก่อสร้างและติดตั้ง

No.	NAME (ENGLISH)	POSITION	TEAM	NAME (THAI)	ID Card	Tel.	ADDRESS
1		Maintenance team leader	Maintenance				
2		Maintenance operator	Maintenance				
3		Electrician-HSE Assitant	Maintenance				
4		Electrician-HSE Assitant	Maintenance				
5		Electrician	Maintenance				
6		Welder	Maintenance				
7		Welder	Maintenance				
8		Driver	Maintenance				
9		Workover team leader	Workover				
10		Tool pusher	Workover				
11		Tool pusher	Workover				
12		Well Services driller	Workover				
13		Crane Driver	Workover				
14		Operation team leader	Production				
15		Crude Loader	Production				
16		Operator	Production				
17		Operator	Production				
18		Operator	Production				
19		Operator	Production				
20		Operator	Production				
21		Operator	Production				
22		Operator	Production				
23		Operator	Production				
24		Operator	Production				

No.	NAME (ENGLISH)	POSITION	TEAM	NAME (THAI)	ID Card	Tel.	ADDRESS
1		Welder	Maintenance				
2		Electrician/asist	Maintenance				
3		Water Truck	Maintenance				
4		Electrician/Crane	Maintenance				
5		Helper	Maintenance				
6		Helper	Maintenance				
7		Helper	Maintenance				
8		Helper	Maintenance				
9		Janitor	Maintenance				
10		Janitor	Maintenance				
11		Janitor	Maintenance				
12		Janitor	Maintenance				
13		Janitor	Maintenance				
14		BYA Guard	Maintenance				
15		BYA Guard	Maintenance				
16		Janitor	Maintenance				
17		Cooker	Maintenance				
18		Welder	Maintenance				
19		Welder	Maintenance				
20		Well Services driller	Workover				
21		Pump Man	Workover				
22		Workover A/D	Workover				
23		Workover Derick man	Workover				
24		well Service operator	Workover				
25		well Service operator	Workover				
26		well Service operator	Workover				
27		well Service operator	Workover				
28		Workover derick man	Workover				
29		Workover derick man	Workover				
30		Workover derick man	Workover				
31		well Service operator	Workover				
32		Operator	Production				
33		Operator	Production				
34		Operator	Production				
35		Operator	Production				
36		Operator	Production				
37		Operator	Production				
38		Operator	Production				
39		Operator	Production				

40		Operator	Production					
41		Operator	Production					
42		Operator	Production					
43		Operator	Production					
44		Operator	Production					
45		Operator	Production					
46		Operator	Production					
47		Operator	Production					
48		Operator	Production					
49		Operator	Production					
50		Operator	Production					
51		Operator	Production					
52		Assistant Driller	Swab					
53		Assistant Driller	Swab					
54		Derrick Man	Swab					
55		Derrick Man	Swab					
56		Derrick Man	Swab					
57		Rig Guard	Swab					

ระยะเจาะหลุมปิโตรเลียม

CNPCHK (Thailand) Limited
Drilling Team Temporary Staff (Site office) 2024

No.	NAME (THAI)	NAME (ENGLISH)	SEX	NATIONALITY	DATE OF BIRTH	AGE	ID	ADDRESS	POSITION 2024	POSITION 2022
1									Welder	Roughneck
2									Mechanic Assistance	Welder
3									Rig Guard	Rig Guard
4									Rig Guard	Asist Driller
5									Rig Driver	-
6									Rig Driver	Rig Griver
7									Room Lady	Extra
8									Room Lady	Extra
9									Room Lady	-
10									Room Lady	-

Panom Hoonsing Group

No.	NAME (THAI)	NAME (ENGLISH)	SEX	NATIONALITY	DATE OF BIRTH	AGE	ID	ADDRESS	POSITION 2024	POSITION 2022
1									Assist Driller	Assist Driller
2									Assist Driller	Derrick Man
3									Derrick Man	Derrick Man
4									Derrick Man	Derrick Man
5									Derrick Man	Roughneck
6									Mud Man	Mud Man
7									Mud Man	
Worked 1-20 April									Mud Man	-
8 (start 1st date on 24April2024)									Mud Man	
9									Roughneck	-
10									Roughneck	-
11									Roughneck	
12									Roughneck	-
13									Roughneck	-
14									Roughneck	-
15									Motor Man	Motor Man

Peerawat Jairak Group

No.	NAME (THAI)	NAME (ENGLISH)	SEX	NATIONALITY	DATE OF BIRTH	AGE	ID	ADDRESS	POSITION 2024	POSITION 2022
1									Assist Driller	Assist Driller
2									Derrick Man	Derrick Man
3									Derrick Man	Derrick Man
4									Derrick Man	Derrick Man
5									Mud Man	Mud Man
6									Mud Man	Mud Man
7									Mud Man	-
8									Roughneck	Roughneck
9									Roughneck	Roughneck
10									Roughneck	-
Resigned (worked 1-12 April)									Roughneck	-
11 (start 1st date on 19April2024)									Roughneck	
12									Roughneck	-
13									Roughneck	-
14									Motor Man	Motor Man
15									Motor Man	Motor Man



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ฉบับเดือนมกราคม - มิถุนายน พ.ศ.2567

ภาคผนวก ข.6

แผนการจัดการเหตุฉุกเฉิน



คู่มือแผนฉุกเฉินของบริษัท



มกราคม 2564



แผนตอบสนองในกรณีเกิดเหตุภาวะฉุกเฉิน

ภาวะฉุกเฉิน หมายถึง สถานการณ์ที่เป็นอันตรายที่อาจทำให้เกิดการบาดเจ็บ , ทรัพย์สินเสียหาย และมีผลกระทบต่อสิ่งแวดล้อม ได้แก่ เหตุฉุกเฉินกรณีเพลิงไหม้หรือระเบิด เหตุฉุกเฉินกรณีสารเคมีหรือน้ำมันรั่วไหล เหตุฉุกเฉินกรณีเกิดการพุ่ง (Blowout)

ขั้นตอนการปฏิบัติ

บริษัทได้กำหนดมาตรการจัดเตรียมความพร้อมและรับมือเหตุฉุกเฉิน ไว้ 3 ระยะดังนี้

- ระยะที่ 1 : มาตรการเตรียมความพร้อมเพื่อรองรับก่อนเกิดเหตุภาวะฉุกเฉิน
- ระยะที่ 2 : มาตรการตอบโต้ระหว่าง เกิดเหตุภาวะฉุกเฉิน
- ระยะที่ 3 : มาตรการฟื้นฟู ภายหลัง เกิดเหตุภาวะฉุกเฉิน

มาตรการเตรียมความพร้อมเพื่อรองรับก่อนเกิดเหตุภาวะฉุกเฉิน

1. ประเมินความเสี่ยงเพื่อระบุอุบัติเหตุที่เป็นไปได้และกรณีเลวร้ายที่สุดที่อาจเกิดขึ้น แล้วจึงจัดเตรียมความพร้อมตามความจำเป็น
2. จัดเตรียม ตรวจสอบ และบำรุงรักษาอุปกรณ์ป้องกันและระงับเหตุฉุกเฉิน รวมทั้งอุปกรณ์ระบบแจ้งเหตุฉุกเฉิน เป็นประจำอย่างสม่ำเสมอ
3. จัดเตรียมกำลังคน และการฝึกซ้อม การปฏิบัติตามแผนฉุกเฉิน ตลอดจนการฝึกอบรมให้กับพนักงานมีความรู้ในด้านการระงับเหตุฉุกเฉิน

โดยทางบริษัทจะกำหนดการซ้อมดังนี้

- การซ้อมแผน ในระดับ 1 ปีละ 2 ครั้ง
 - การซ้อมแผน ในระดับ 2 ร่วมกับหน่วยงานราชการและภายนอก 3 ปี / 1 ครั้ง
4. กำหนดบทบาทหน้าที่ความรับผิดชอบของพนักงานที่เกี่ยวข้องตามองค์กรแผนฉุกเฉิน โดยผู้รับผิดชอบแต่ละหน้าที่จะต้องมีการปฏิบัติโดยเคร่งครัด
 5. กำหนดขั้นตอนการป้องกันและการตรวจสอบแนวท่อลำเลียงปิโตรเลียมในกรณีเหตุฉุกเฉินน้ำมันรั่วไหลดังต่อไปนี้
 - 1) ในการติดตั้งท่อลำเลียงน้ำมัน เลือกใช้ท่อที่ได้ตามมาตรฐานที่เกี่ยวข้อง และกำหนดไม่ให้มีวาล์วและจุดต่อตลอดแนวที่ชำรุดคล่อง



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- 2) ติดตั้งป้ายและสัญลักษณ์แนวท่อลำเลียงปิโตรเลียม และเบอร์ฉุกเฉิน บริเวณแนวท่อที่ข้ามคลองทุกจุด รวมทั้งแนวท่อบนดินและใต้ดินตามตามกฎกระทรวงพลังงาน “**กำหนดเขตปลอดภัยและเครื่องหมายในบริเวณที่มีสิ่งติดตั้งและกลอุปกรณ์ที่ใช้ในการสำรวจและผลิตปิโตรเลียม พ.ศ. ๒๕๕๕**”
- 3) กำหนดให้พนักงาน operator ดำเนินการตรวจตราแนวท่อลำเลียงปิโตรเลียมทั้งจุดที่ข้ามคลอง บนดินและใต้ดินเพื่อดู ความผิดปกติต่างๆของท่อ เป็นประจำทุกวัน
- 4) ตรวจสอบการรั่วไหลของท่อ โดยการเปิดปิดวาล์วต้นทางและปลายทางของแนวท่อที่จะตรวจสอบ เพื่อตรวจดูแรงดันที่เปลี่ยนแปลงไปที่จะเกิดการรั่วไหล

มาตรการตอบโต้ระหว่าง เกิดเหตุภาวะฉุกเฉิน

หน้าที่และความรับผิดชอบ

1. ผู้จัดการทั่วไป คือ General Manager มีหน้าที่ อนุมัติให้การอำนวยความสะดวกในการรับมือเหตุฉุกเฉิน ระดับ 2 และ ระดับ 3
2. ผู้อำนวยการภาคสนาม(Emergency Director) คือ รองผู้จัดการทั่วไป(Deputy General Manager) หรือผู้ปฏิบัติหน้าที่แทน มีหน้าที่ ให้คำปรึกษาแก่ผู้จัดการภาคสนาม เป็นผู้อนุมัติตัดสินใจสั่งการควบคุมเหตุฉุกเฉินระดับ รุนแรง (ระดับ 2 และ ระดับ 3)
3. ผู้จัดการภาคสนาม(On scene Commander) คือ หัวหน้าส่วนผลิต มีหน้าที่ เป็นผู้สั่งการควบคุมเหตุฉุกเฉินที่เกิดเหตุ สั่งการให้ทีมระงับเหตุประจำภาคสนามปฏิบัติหน้าที่ระงับเหตุ จัดทำรายงานอุบัติการณ์เมื่อเหตุการณ์เข้าสู่สภาวะปกติ
4. วิศวกรภาคสนาม คือ วิศวกรฝ่ายผลิต มีหน้าที่ เป็นผู้ประสานงานประจำภาคสนาม กับหน่วยงานภายในและภายนอกบริษัท
5. ผู้ประสานงานสนับสนุนการขนส่ง (Logistic Support Coordinator) คือ สำนักงานกรุงเทพฯ มีหน้าที่ ประสานงาน สนับสนุนการขนส่งถ้ามีการร้องขอจากภาคสนาม
6. ทีมระงับเหตุประจำภาคสนาม คือ ทีมที่ผู้จัดการภาคสนามแต่งตั้ง มีหน้าที่ ปฏิบัติงานตามคำสั่งผู้จัดการภาคสนามให้ระงับเหตุฉุกเฉินต่างๆที่เกิดขึ้น

เมื่อเกิดเหตุการณ์ฉุกเฉินในพื้นที่ของบริษัท บริษัทได้แบ่งระดับความรุนแรงไว้ 3 ระดับ ดังนี้

เหตุฉุกเฉินระดับที่ 1 ได้แก่ เหตุฉุกเฉินที่เกิดขึ้นในฐานผลิตหรือฐานเจาะผลิตฐานใดฐานหนึ่ง ที่เกิดเหตุการณ์ขนาดเล็ก และสามารถควบคุมได้ในเวลาที่จำกัด ซึ่งสามารถรับมือได้ด้วยทรัพยากรของบริษัทที่มีอยู่ในพื้นที่ เช่น การเกิดเหตุเพลิงไหม้หรือการระเบิดเล็กน้อย การรั่วไหลของน้ำมัน(ปริมาณน้ำมันที่รั่วไม่เกิน 10 ตัน) หรือสารเคมีรั่วไหลปริมาณเล็กน้อยในขอบเขตพื้นที่ของฐานหลุมผลิต เหตุการณ์ระดับนี้ไม่จำเป็นต้องขอความช่วยเหลือจากภายนอก



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เหตุฉุกเฉินระดับที่ 2 ได้แก่ เหตุฉุกเฉินที่เกิดขึ้นมีการลุกลามออกไปจากเหตุฉุกเฉินระดับ 1 ครอบคลุมถึงเหตุการณ์ระดับความรุนแรงปานกลาง ซึ่งสามารถรับมือได้ด้วยทรัพยากรของบริษัทที่มีอยู่ในพื้นที่ โดยอาจจะต้องขอความร่วมมือจากหน่วยงานภายนอก เช่น กรณีการเกิดเหตุเพลิงไหม้หรือการระเบิด การรั่วไหลของน้ำมัน(ปริมาณน้ำมันที่รั่วเกิน 10 ตันแต่ไม่ถึง 100 ตัน)หรือสารเคมีรั่วไหลนอกขอบเขตพื้นที่ฐานหลุมผลิต เหตุการณ์เพลิงไหม้ปานกลาง อาจจะต้องขอความช่วยเหลือจากหน่วยงานภายนอก เช่น ตำรวจ ดับเพลิงของ อบ.ต. และผู้ประกอบการสำรวจและผลิตปิโตรเลียมรายอื่นในพื้นที่ใกล้เคียง

เหตุฉุกเฉินระดับที่ 3 ได้แก่ เหตุฉุกเฉินที่เกิดขึ้นมีการลุกลามออกไปบริเวณกว้างและรุนแรง ใช้ระยะเวลานานในการควบคุมเหตุฯ ครอบคลุมถึงเหตุการณ์ขนาดใหญ่ซึ่งเกินกว่าความสามารถในการรับมือของบริษัทและหน่วยงานภายนอกในท้องถิ่นต้องขอความช่วยเหลือจากแผนระงับเหตุของจังหวัด เช่น กรณีการเกิดเหตุเพลิงไหม้หรือการระเบิดรุนแรงและต่อเนื่อง การรั่วไหลของน้ำมันปริมาณมาก(ปริมาณน้ำมันที่รั่วเกิน 100 ตันขึ้นไป) เกิดการพุ่ง(Blowout) หรือเหตุการณ์ที่มีผู้บาดเจ็บหรือเสียชีวิตหลายราย ทั้งนี้ต้องขอความช่วยเหลือจากทีมรับมือเหตุฉุกเฉินของเจ้าของโครงการ โดยมีการสนับสนุนจากสำนักงานกรุงเทพฯ และหน่วยงานรับมือเหตุฉุกเฉินระดับประเทศ(แผนฉุกเฉิน ระดับจังหวัด)

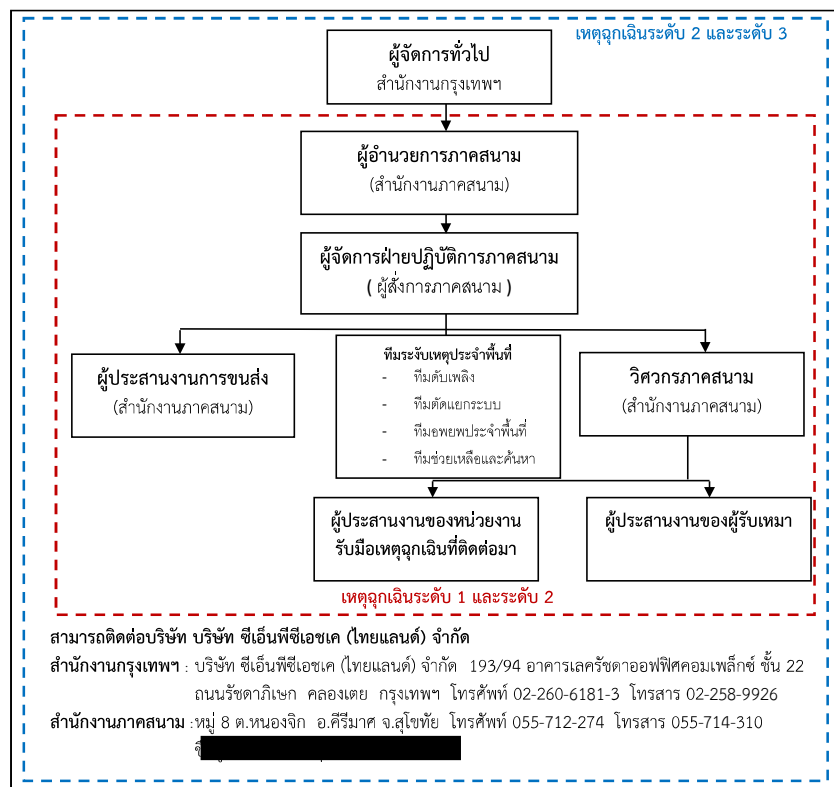
ทั้งนี้ผู้จัดการภาคสนามของบริษัทจะเป็นผู้ตัดสินใจประเมินระดับความรุนแรงของเหตุฉุกเฉินที่เกิดขึ้น และดำเนินการตอบสนองอย่างเหมาะสมตามลำดับ

โครงสร้างผังองค์กรรับมือกรณีเกิดเหตุฉุกเฉินของบริษัท แสดงดังรูปที่ 1 ประกอบด้วย

- ผู้จัดการทั่วไป
- ผู้อำนวยการภาคสนาม
- ผู้จัดการภาคสนาม
- ผู้ประสานงานภาคสนาม(วิศวกรภาคสนาม)
- ผู้ประสานงานสนับสนุนการขนส่ง (Logistic Support Coordinator)
- ผู้ประสานงานของผู้รับเหมา (ในกรณีที่จำเป็น)
- ผู้ประสานงานของหน่วยงานระงับเหตุฉุกเฉินที่เข้าร่วมปฏิบัติการ (เช่น ตำรวจ ดับเพลิง หน่วยงานราชการ) ในกรณีที่จำเป็น



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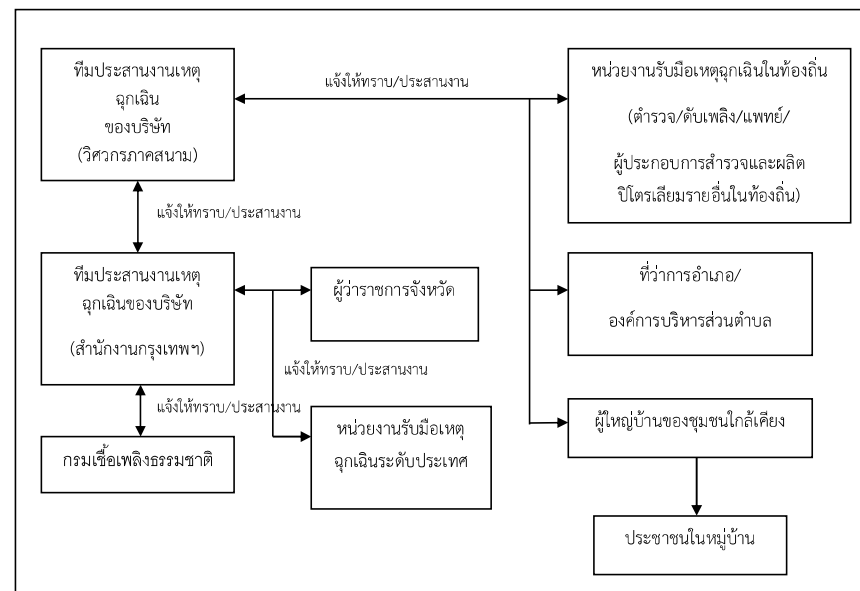


รูปที่ 1 โครงสร้างผังองค์กรรับมือกรณีเกิดเหตุฉุกเฉินของบริษัท



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ในกรณีที่บริษัทต้องการความช่วยเหลือจากหน่วยงานภายนอกจะดำเนินการตามผังการประสานงานกับหน่วยงานภายนอก ดังแสดงในรูปที่ 2



รูปที่ 2 ผังการประสานงานกับหน่วยงานภายนอกของบริษัทเมื่อเกิดเหตุฉุกเฉินกรณีเกิดเหตุฉุกเฉินระดับ 2 และ 3

แผนรองรับกรณีเกิดเหตุฉุกเฉินต่าง ๆ

บริษัทได้จัดให้มีแผน/มาตรการปฏิบัติสำหรับการตอบสนองต่อเหตุฉุกเฉินต่าง ๆ ที่เกิดขึ้นในพื้นที่ผลิตปิโตรเลียมของแปลงสัมปทานของบริษัท ซึ่งครอบคลุมฐานหลุมผลิต ท่อขนส่ง และพื้นที่ปฏิบัติงานต่าง ๆ ของบริษัท การตอบสนองต่อเหตุฉุกเฉินตลอดช่วงระยะเวลาของโครงการตั้งแต่การก่อสร้างฐานหลุมผลิต การเจาะหลุมผลิต การทดสอบหลุม การผลิต และการสิ้นสุดการดำเนินการและรื้อถอนโครงสร้าง ทางบริษัทจะปฏิบัติตามคู่มือระบบการจัดการด้านสุขภาพอนามัย ความปลอดภัย และสิ่งแวดล้อม ซึ่งถือว่าเป็นมาตรฐานเดียวกันที่ใช้กับทุกพื้นที่ที่ดำเนินการของบริษัทในเขตแปลงสัมปทาน ซึ่งจากคู่มือดังกล่าว สามารถสรุปรายละเอียดแผนฉุกเฉินที่สำคัญและเกี่ยวข้องกับโครงการได้ดังนี้

1) แผนปฏิบัติการกรณีเกิดเพลิงไหม้

แผนปฏิบัติการกรณีเกิดเพลิงไหม้ และระบบป้องกันอัคคีภัยในช่วงเจาะหลุมผลิต และทดสอบหลุม จะเป็นมาตรฐานเดียวกันสำหรับฐานหลุมผลิตทุกแห่งของบริษัทโดยมีวัตถุประสงค์เพื่อกำหนดแนวทางการปฏิบัติในกรณีที่เกิดเพลิงไหม้ ซึ่งบริษัทได้กำหนดแนวทางการปฏิบัติสำหรับทีมรับมือเหตุฉุกเฉินของบริษัทเท่านั้น หากไม่สามารถควบคุมสถานการณ์ได้ควรขอความช่วยเหลือจากหน่วยงานภายนอกเช่น หน่วยงานดับเพลิง โดยมีขั้นตอนดังนี้



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- พนักงานที่เป็นผู้พบเห็นเหตุเพลิงไหม้จะต้องส่งสัญญาณเตือนและแจ้งให้หัวหน้ากลุ่มงานผู้จัดการภาคสนามและวิศวกรภาคสนามทราบ รวมทั้งแจ้งสถานที่ที่เกิดเพลิงไหม้ด้วย
- พนักงานที่เป็นผู้พบเหตุควมพยายามดับเพลิงด้วยตนเองซึ่งอาจจะใช้ทราย เครื่องดับเพลิงชนิดหัวถือ (ทั้งแบบผงเคมีแห้ง ก๊าซคาร์บอนไดออกไซด์ ตามความเหมาะสม) หรือใช้น้ำดับเพลิง อย่างไรก็ตามหากเหตุการณ์ที่เกิดขึ้นเป็น “เพลิงไหม้ขั้นรุนแรง (Fully Involved Fire)” จะเป็นเหตุการณ์ที่อันตรายเกินไปที่จะสามารถรับมือได้เพียงลำพังจึงต้องเรียกให้ทีมระงับเหตุฉุกเฉินเข้ามาจัดการ
- เมื่อผู้จัดการภาคสนามได้รับแจ้งเหตุแล้วจะต้องออกคำสั่งอพยพพนักงานทั้งหมด และเรียกให้ทีมระงับเหตุฉุกเฉินมารวมตัว
- พนักงานอื่น ยกเว้นทีมระงับเหตุฉุกเฉินต้องไปรวมตัวกันที่จุดรวมพลที่กำหนดไว้ เพื่อบันทึกจำนวนและค้นหาผู้สูญหาย
- ผู้จัดการภาคสนามจะเป็นผู้ควบคุมในสถานที่เกิดเหตุและออกคำสั่งกับทีมระงับเหตุฉุกเฉิน วิศวกรภาคสนามจะติดต่อขอความช่วยเหลือจากภายนอกเช่น ตำรวจ เจ้าหน้าที่ดับเพลิงและรถพยาบาล หากจำเป็น
- เพิ่มความระมัดระวังโดยพิจารณาความเสี่ยงที่จะเกิดการระเบิดเนื่องจากไฟ
- ผู้จัดการภาคสนามจะเป็นผู้ประเมินระดับความรุนแรงของสถานการณ์และตัดสินใจว่าจะเริ่มกระบวนการ “ขั้นตอนการรับรู้และการมีส่วนร่วมของประชาชน” หรือไม่ เพื่อขอความช่วยเหลือและความร่วมมือ หรือเริ่มการอพยพประชาชนในพื้นที่
- ปฐมพยาบาลพนักงานที่ได้รับบาดเจ็บในที่เกิดเหตุหรือที่จุดรวมพลตามความเหมาะสม
- พยายามกำจัดเชื้อเพลิงหากสามารถทำได้โดยปลอดภัย เช่น ปิดวาล์วของเหลวไวไฟ ขนย้ายวัตถุไวไฟออกไป ฯลฯ รายละเอียดในการปฏิบัตินั้น พนักงานจะได้เรียนรู้ในขั้นตอนการอบรมการพจญเพลิงขั้นพื้นฐานและขั้นสูง (Basic and/or Advance Fire Fighting Training)
- หากเพลิงไหม้ที่เกิดขึ้นเกี่ยวข้องกับอุปกรณ์ไฟฟ้าจะต้องตัดไฟฟ้าก่อนที่จะลงมือดับเพลิง เพื่อป้องกันการถูกไฟฟ้าช็อต
- วิธีการในการดับเพลิงขึ้นอยู่กับเชื้อเพลิงแต่ละชนิด ดังต่อไปนี้ (ตัวอย่างอุปกรณ์ดับเพลิงประจำฐานหลุมผลิตแสดงดังรูปที่ 21)
 - ขอบแข็งติดไฟได้ เช่น ไม้ กระดาษ เศษผ้า ฯลฯ ดับโดยใช้น้ำ ทราย หรือเครื่องดับเพลิงชนิดผงเคมีแห้ง สำหรับน้ำดับเพลิงจะใช้น้ำสำรองจากบ่อเก็บน้ำในฐานหลุมผลิต
 - ไอของของเหลวไวไฟ เช่น น้ำมันดิบ น้ำมันหล่อลื่น น้ำมันเบนซิน น้ำมันดีเซล ฯลฯ ดับโดยใช้เครื่องดับเพลิงชนิดผงเคมีแห้งหรือโฟม



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- สำหรับไฟที่มีอุปกรณ์ไฟฟ้าเข้ามาเกี่ยวข้องใช้เครื่องดับเพลิงชนิดก๊าซคาร์บอนไดออกไซด์ โดยต้องตัดแหล่งจ่ายกระแสไฟฟ้าก่อนเริ่มดับเพลิง
 - ไฟที่เกิดจากก๊าซไวไฟ ดับโดยใช้เครื่องดับเพลิงชนิดผงเคมีแห้ง น้ำที่ฉีดเป็นลำเพื่อดับเปลวเพลิง จากนั้นจึงปิดแหล่งจ่ายก๊าซ
12. ม่านน้ำหรือน้ำที่ฉีดเป็นละออง สามารถใช้เพื่อป้องกันพนักงานและเครื่องจักรต่าง ๆ ระหว่างการดับเพลิงได้
 13. ผู้จัดการภาคสนามควรให้ความร่วมมือและให้คำแนะนำกับเจ้าหน้าที่หน่วยงานภายนอกที่มาช่วยเหลือ เช่น เจ้าหน้าที่ดับเพลิง



รูปที่ 3 ตัวอย่างอุปกรณ์ป้องกันอัคคีภัยที่ติดตั้งประจำฐานของโครงการ

ทั้งนี้ บริษัทได้แบ่งเจ้าหน้าที่ตามหน้าที่รับผิดชอบไว้ดังนี้

ผู้จัดการฐานปฏิบัติการ	ต้องควบคุมสถานที่เกิดเหตุ สั่งการทีมระงับเหตุฉุกเฉินประสานกับเจ้าหน้าที่ตำรวจ เจ้าหน้าที่ดับเพลิง และรถพยาบาล จัดทำรายงานอุบัติการณ์เมื่อเหตุการณ์เข้าสู่สภาวะปกติ
ทีมระงับเหตุฉุกเฉิน	ต้องสนับสนุนการทำงานของผู้จัดการภาคสนาม ดำเนินการดับเพลิง และปฐมพยาบาลหากสามารถทำได้
ผู้ประสานงานภาคสนาม	ต้องติดต่อขอความช่วยเหลือจากภายนอกและสำนักงานใหญ่ที่กรุงเทพฯ เป็นผู้ติดต่อกับสื่อมวลชนต่าง ๆ จัดหาการสนับสนุนตามที่ผู้จัดการภาคสนามร้องขอ ตรวจสอบรายงานอุบัติเหตุและจัดให้มีการสอบสวนอุบัติเหตุเมื่อเหตุการณ์เข้าสู่สภาวะปกติ
พนักงานอื่น	ต้องไปรวมกันที่จุดรวมพลและรอคำสั่งต่อไปจากผู้จัดการภาคสนาม หรือผู้จัดการฐานปฏิบัติการ



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2) แผนปฏิบัติการป้องกันการฟุ้ง (Blowout)

แผนปฏิบัติการป้องกันการฟุ้ง (Blowout) ในระหว่างการเจาะหลุมปิโตรเลียม โครงการจะดำเนินการตาม Blowout Contingency Plan โดยมีวัตถุประสงค์เพื่อกำหนดแนวทางการปฏิบัติในกรณีที่เกิดการฟุ้งของปิโตรเลียม ซึ่งได้จำแนกเป็นขั้นตอนต่าง ๆ ดังนี้

1. มีมาตรการในการป้องกันหลายชนิด เพื่อป้องกันการฟุ้งหรือการรั่วไหลที่ไม่สามารถควบคุมได้
 - ข้อมูลและความรู้เกี่ยวกับพื้นที่แหล่งสัมปทาน
 - ระบบโคลนช่วยเจาะ
 - ระบบป้องกันการฟุ้ง (Blowout Preventor ; BOP) และกลไก ซึ่งเมื่อ Ram ปิด จะมีใบมีดตัดท่อแยก BOP ออกจากท่อส่วนบน (Shear Ram)
 - ขั้นตอนการปฏิบัติในการควบคุมหลุม
2. ข้อมูลและความรู้เกี่ยวกับพื้นที่แหล่งสัมปทาน จะได้จากข้อมูลทางธรณีวิทยา การสำรวจด้วยวิธีวัดคลื่นไหวสะเทือน และการสำรวจอย่างละเอียด รวมทั้งการเจาะเพื่อการผลิตในแหล่งใกล้เคียง รายละเอียดข้อมูลเกี่ยวกับสภาพธรณีวิทยาใต้ดิน และการก่อตัวของแรงดันจะช่วยให้สามารถคาดการณ์การก่อตัวของแรงดันที่จะผลักดัน
3. การควบคุมความดันได้จากระบบโคลนช่วยเจาะที่สร้างแรงดันที่ผิวหน้าของโครงสร้าง ซึ่งจะก่อให้เกิดแรงดันมากกว่าแรงดันสมดุลตามธรรมชาติในโครงสร้างชั้นหิน อย่างไรก็ตามอาจมีการสูญเสียแรงดันได้โดยเมื่อหัวขุดเจาะทะลุผ่านชั้นโครงสร้างที่มีแรงดันสูง พรุณ และน้ำซึมผ่านได้โดยไม่คาดคิด จะมีของเหลวหรือก๊าซที่สามารถดันน้ำโคลนขึ้นได้หรือผ่านบริเวณรอยแยกที่มีแรงดันต่ำ ซึ่งโคลนจะถูกดึงเข้าไปในชั้นโครงสร้าง
4. หากระบบโคลนช่วยเจาะล้มเหลว ปล่อง BOP จะเป็นระบบป้องกันอีกชั้น ซึ่งระบบนี้มีวาล์วที่ทำงานแยกกันโดยอิสระ 3 ชุด แต่ละชุดสามารถปิดผนึกหลุมได้ และวาล์ว BOP นี้ได้รับการออกแบบให้สามารถทนแรงดันในหลุมที่จะเกิดขึ้นภายหลังได้ทั้งหมด
5. ขั้นตอนการปฏิบัติงานปกติในการควบคุมหลุม อธิบายหน้าที่และขั้นตอนที่ควรทำเพื่อจัดการควบคุมหลุมกลับมาและสร้างความปลอดภัย
6. ผู้จัดการภาคสนาม จะเป็นผู้ประเมินระดับความรุนแรงของสถานการณ์ และตัดสินใจว่าจะเริ่มกระบวนการ "ขั้นตอนการรับรู้และมีส่วนร่วมของประชาชน" หรือไม่ เพื่อขอความช่วยเหลือและความร่วมมือ หรือเริ่มการอพยพประชาชนในพื้นที่
7. ให้ความระมัดระวังเป็นพิเศษต่อความเสี่ยงที่จะเกิดเพลิงไหม้ การระเบิด หรือการปล่อยก๊าซพิษที่จะเกิดการฟุ้ง หากมีความเสี่ยงที่จะเกิดกรณีดังกล่าว ควรอพยพในพื้นที่รอบบริเวณที่เกิดเหตุ ปิดกั้นถนนใกล้เคียง โดยขอความร่วมมือจากตำรวจและหน่วยงานราชการในพื้นที่
8. หากเกิดการฟุ้งขึ้นและไม่สามารถควบคุมหลุมได้จากการใช้ปล่อง BOP และระบบโคลน ผู้เชี่ยวชาญเกี่ยวกับการฟุ้งจะติดตั้งอุปกรณ์พิเศษ และกำหนดขั้นตอนพิเศษเพื่อลดอัตราการไหลหรือหยุดหลุมหากวิธีอื่น ๆ ล้มเหลวจะขุดเจาะหลุมช่วย (Relief Well)

ทั้งนี้เจ้าของโครงการได้แบ่งหน้าที่ตามหน้าที่รับผิดชอบ ไว้ดังนี้

ผู้จัดการภาคสนาม ต้องควบคุมการปฏิบัติงานที่หลุมเจาะ ปรึกษากับวิศวกรภาคสนามเกี่ยวกับวิธีการปฏิบัติ

ผู้ประสานงานภาคสนาม ต้องตรวจสอบให้แน่ใจว่าอุปกรณ์ทุกชนิดอยู่ในสภาพที่ใช้งานได้ โดยจัดให้มีการซ่อมบำรุงอย่างสม่ำเสมอ จัดเตรียมการติดต่อผู้เชี่ยวชาญเกี่ยวกับการฟุ้ง



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พนักงานปฏิบัติการหลุมเจาะ ต้องดำเนินการตามขั้นตอนการควบคุมหลุม ประสานงานกับผู้เชี่ยวชาญเกี่ยวกับการฟุ้ง หากมีการเรียกเข้ามา

3) แผนปฏิบัติการเหตุฉุกเฉินน้ำมันรั่วไหล

มาตรการจัดการเหตุฉุกเฉินน้ำมันรั่วไหล ครอบคลุมการรั่วไหลทั้งในพื้นที่ฐานหลุมผลิตทุกแห่ง และตลอดการขนส่งปิโตรเลียมโดยรถบรรทุก จะดำเนินการตามมาตรฐานเดียวกัน โดยมีวัตถุประสงค์เพื่อควบคุมการปนเปื้อนของน้ำมันต่อสิ่งแวดล้อมโดยรอบพื้นที่ที่เกิดการรั่วไหล รวมถึงความปลอดภัยในชีวิตและทรัพย์สิน โดยมีวิธีการปฏิบัติโดยทั่วไป (เหตุฉุกเฉินในระดับที่ 1) เมื่อประสบเหตุน้ำมันรั่วไหล ดังนี้

1. ผู้ที่พบเหตุน้ำมันรั่วไหลคนแรก ทำการหยุดกระบวนการที่เกี่ยวข้องกับการรั่วไหล และรายงานต่อผู้บังคับบัญชา หัวหน้างาน และผู้จัดการภาคสนาม
2. ผู้จัดการภาคสนามจะเป็นผู้ควบคุมและสั่งการในที่เกิดเหตุ เรียกให้ทีมระงับเหตุฉุกเฉินรวมตัว และเตรียมพร้อมเพื่อรับคำสั่งจากผู้จัดการภาคสนาม
3. จัดเตรียมวัสดุดูดซับ (เช่น วัสดุดูดซับสำเร็จรูปแบบแท่ง แบบแผ่น หรือทราย) โดยทีมระงับเหตุฉุกเฉินจะเป็นผู้นำไปใช้
4. ผู้จัดการภาคสนามจะเป็นผู้ตัดสินใจว่าจะต้องร้องขอความช่วยเหลือจากหน่วยงานภายนอก เช่น เจ้าหน้าที่ดับเพลิงหรือบริษัทจัดการน้ำมันรั่วไหลหรือไม่ โดยทั่วไปต้องร้องขอความช่วยเหลือจากหน่วยงานภายนอก เมื่อน้ำมันรั่วไหลมีปริมาณมากกว่า 10 ลูกบาศก์เมตร (ประมาณ 10 ตัน)
5. ผู้จัดการภาคสนาม จะเป็นผู้ประเมินระดับความรุนแรงของสถานการณ์ และตัดสินใจว่าจะเริ่มกระบวนการ "ขั้นตอนการรับรู้และมีส่วนร่วมของประชาชน" หรือไม่ เพื่อขอความช่วยเหลือและความร่วมมือ หรือเริ่มการอพยพประชาชนในพื้นที่
6. การตัดสินใจข้างต้น พิจารณาจากปริมาณน้ำมันที่รั่วไหล ความสามารถในการจัดการกับน้ำมันที่รั่วไหลของบริษัท ระยะเวลาที่บริษัทจัดการน้ำมันรั่วไหลจะมาถึง และอื่น ๆ
7. ทีมระงับเหตุฉุกเฉินต้องจัดทำขอบเขตกัน เช่น คันดิน หรือชุดร่อง เพื่อป้องกันน้ำมันที่รั่วไหลไม่ให้ไหลลงสู่แหล่งน้ำ
8. ทีมระงับเหตุฉุกเฉินค้นหาที่มาของน้ำมันที่รั่วไหลและหยุดการรั่วไหลหากทำได้โดยปลอดภัย
9. ทีมระงับเหตุฉุกเฉินใช้วัสดุดูดซับเพื่อกำจัดน้ำมันที่รั่วไหลให้ได้มากที่สุด
10. หากน้ำมันที่รั่วไหลซึมลงดิน ต้องขุดดินบริเวณนั้นขึ้นมาและนำไปกำจัด
11. หากน้ำมันที่รั่วไหลมีโอกาสดึงแหล่งน้ำ ทีมระงับเหตุฉุกเฉินควรติดตั้งอุปกรณ์ดูดซับชนิดลอยน้ำได้ทั้งบริเวณเหนือน้ำและท้ายน้ำ เพื่อป้องกันไม่ให้น้ำมันที่รั่วไหลกระจายออกไป



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- วัสดุที่ปนเปื้อนน้ำมัน เช่น ดินที่มีการปนเปื้อน วัสดุดูดซับที่ใช้แล้ว ให้กำจัดเช่นเดียวกับของเสียอันตราย

ทั้งนี้ บริษัทได้แบ่งเจ้าหน้าที่ตามหน้าที่รับผิดชอบ ไว้ดังนี้

ผู้จัดการภาคสนาม	ต้องควบคุมสถานการณ์ที่เกิดเหตุ ออกคำสั่งต่อทีมระงับเหตุฉุกเฉิน ประสานงานกับเจ้าหน้าที่ตำรวจ เจ้าหน้าที่ดับเพลิง บริษัทจัดการน้ำมัน รั่วไหล รถพยาบาล และประชาชน จัดทำรายงานอุบัติการณ์เมื่อสถานการณ์กลับเข้าสู่ภาวะปกติ
ทีมระงับเหตุฉุกเฉิน	ต้องสนับสนุนการทำงานของผู้จัดการภาคสนาม ป้องกันการรั่วไหลเพิ่มเติม และปฏิบัติการรับมือการรั่วไหลขั้นต้น
ผู้ประสานงานภาคสนาม	ต้องติดต่อขอความช่วยเหลือจากภายนอก และสำนักงานใหญ่ที่กรุงเทพฯ เป็นผู้ติดต่อกับสื่อมวลชนต่าง ๆ จัดหาการสนับสนุนตามที่ผู้จัดการภาคสนามร้องขอ ตรวจสอบรายงานอุบัติเหตุ และจัดให้มีการสอบสวนอุบัติเหตุ เมื่อเหตุการณ์เข้าสู่ภาวะปกติ
พนักงานอื่น	ต้องไปรวมตัวที่จุดรวมพล ซึ่งจัดไว้บริเวณใกล้กับพื้นที่ทางเข้าออกฐานหลุมผลิต และรอคำสั่งจากผู้จัดการภาคสนาม หรือผู้จัดการฐานปฏิบัติการ

ในกรณีที่บริษัทต้องการความช่วยเหลือจากหน่วยงานภายนอก จะดำเนินการตามผังการประสานงานกับหน่วยงานภายนอก ดังแสดงในรูปที่ 3 ซึ่งได้ผนวกเข้ากับแผนผังการป้องกันและบรรเทาสาธารณภัยจากสารเคมีและวัตถุอันตรายระดับจังหวัดของจังหวัดสุโขทัยและกำแพงเพชร

4) แผนปฏิบัติการเหตุฉุกเฉินกรณีแผ่นดินไหว

- เมื่อได้รับการเตือนภัยแผ่นดินไหว สำนักงานภาคสนาม(วิศวกรภาคสนาม)ต้องรายงานสถานการณ์ต่อผู้อำนวยการภาคสนาม และผู้จัดการภาคสนาม เพื่อขออนุมัติรายงานสถานการณ์ไปยังสำนักงานใหญ่ในทันที จะเข้าสู่สถานะฉุกเฉินและดำเนินการตามแผนฉุกเฉิน
- ผู้จัดการภาคสนามสั่งการเข้าสู่ภาวะฉุกเฉินและดำเนินการตามแผนทันที
- คนที่มีความรับผิดชอบของทีมรับมือเหตุฉุกเฉินภาคสนามทุกคนต้องปฏิบัติตามคำสั่งที่เกี่ยวข้องผู้อำนวยการภาวะฉุกเฉินหรือผู้จัดการภาวะฉุกเฉิน และพร้อมปฏิบัติงานตามคำสั่ง
- ดำเนินการอพยพพนักงาน ผู้รับเหมา ผู้เยี่ยมชม และประชาชน สำหรับการอพยพไปยังพื้นที่ปลอดภัยที่ได้รับการแต่งตั้งให้เป็นพื้นที่ปลอดภัย
- ในกรณีที่แผ่นดินไหว ทีมกู้ภัยจะต้องช่วยเหลือผู้บาดเจ็บและผู้ประสบภัยก่อนเป็นอันดับแรก เพื่อที่จะรีบการรักษายาบาลไปยังพื้นที่ที่ปลอดภัยเพราะกลัวว่าจะได้รับบาดเจ็บกับทีมกู้ภัยด้วย
- ผู้จัดการภาคสนามสั่งการควบคุมพื้นที่ที่สำคัญ เช่นสถานีการจ่ายน้ำมันหรือสถานีการจ่ายก๊าซเหลว จะมีความเข้มแข็งเพื่อป้องกันไม่ให้เกิดไฟไหม้ระเบิดหรือน้ำมันและก๊าซธรรมชาติรั่วไหลออกมาสู่สิ่งแวดล้อม



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- พนักงานแต่ละหน้าที่ในองค์กรแผนฉุกเฉินจะต้องปฏิบัติงานอย่างเข้มข้น และรีบฟื้นฟูพื้นที่ประสบภัย เพื่อกลับมาผลิตและปฏิบัติงานตามปกติโดยเร็วที่สุดเท่าที่เป็นไปได้

3) แผนปฏิบัติการการทำงานร่วมกันระหว่างหน่วยงาน(SIMOP Response Plan)

มาตรการการปฏิบัติการการทำงานร่วมกันระหว่างหน่วยงาน(SIMOP Response Plan)ครอบคลุมเหตุฉุกเฉินทั้งในพื้นที่ฐานหลุมผลิตทุกแห่งในระหว่างดำเนินการผลิต จะดำเนินการตามมาตรฐานเดียวกัน โดยมีวัตถุประสงค์เพื่อควบคุมเหตุฉุกเฉินใดๆขณะที่เกิดขึ้นในฐานผลิตและฐานผลิตทุกแห่ง เป็นการปฏิบัติการร่วมกันระหว่างหน่วยงานในขณะที่มีการผลิต ไม่ให้เกิดผลกระทบต่องuestแวดล้อม รวมถึงให้เกิดความปลอดภัยในชีวิตและทรัพย์สิน โดยมีวิธีการปฏิบัติโดยทั่วไป (เหตุฉุกเฉินในระดับที่ 1) เมื่อประสบเหตุฉุกเฉินในขณะที่มีการผลิต ดังนี้

- ผู้ที่พบเหตุน้ำมันรั่วไหลคนแรก ทำการหยุดกระบวนการที่เกี่ยวข้องกับการรั่วไหล และรายงานต่อผู้บังคับบัญชา หัวหน้างาน และผู้จัดการภาคสนาม
- ผู้จัดการภาคสนามจะเป็นผู้ควบคุมและสั่งการในที่เกิดเหตุ เรียกให้ทีมระงับเหตุฉุกเฉินรวมตัว และเตรียมพร้อมเพื่อรับคำสั่งจากผู้จัดการภาคสนาม
- จัดเตรียมวัสดุดูดซับ (เช่น วัสดุดูดซับสำเร็จรูปแบบแท่ง แบบแผ่น หรือทราย) โดยทีมระงับเหตุฉุกเฉินจะเป็นผู้นำไปใช้
- ผู้จัดการภาคสนามจะเป็นผู้ตัดสินใจว่าจะต้องร้องขอความช่วยเหลือจากหน่วยงานภายนอก เช่น เจ้าหน้าที่ดับเพลิงหรือบริษัทจัดการน้ำมันรั่วไหลหรือไม่ โดยทั่วไปต้องร้องขอความช่วยเหลือจากหน่วยงานภายนอก เมื่อน้ำมันรั่วไหลมีปริมาณมากกว่า 10 ลูกบาศก์เมตร(ประมาณ 10 ตัน)
- ผู้จัดการภาคสนาม จะเป็นผู้ประเมินระดับความรุนแรงของสถานการณ์ และตัดสินใจว่าจะเริ่มกระบวนการ “ขั้นตอนการรับรู้และการมีส่วนร่วมของประชาชน” หรือไม่ เพื่อขอความช่วยเหลือและความร่วมมือ หรือเริ่มการอพยพประชาชนในพื้นที่
- การตัดสินใจข้างต้น พิจารณาจากปริมาณน้ำมันที่รั่วไหล ความสามารถในการจัดการกับน้ำมันที่รั่วไหลของบริษัท ระยะเวลาที่บริษัทจัดการน้ำมันรั่วไหลจะมาถึง และอื่น ๆ
- ทีมระงับเหตุฉุกเฉินต้องจัดทำขอบเขตกัน เช่น คันดิน หรือขุดร่อง เพื่อป้องกันน้ำมันที่รั่วไหลไม่ให้ไหลลงสู่แหล่งน้ำ
- ทีมระงับเหตุฉุกเฉินค้นหาที่มาของน้ำมันที่รั่วไหลและหยุดการรั่วไหลหากทำได้โดยปลอดภัย
- ทีมระงับเหตุฉุกเฉินใช้วัสดุดูดซับเพื่อกำจัดน้ำมันที่รั่วไหลให้ได้มากที่สุด
- หากน้ำมันที่รั่วไหลซึมลงดิน ต้องขุดดินบริเวณนั้นขึ้นมาและนำไปกำจัด
- หากน้ำมันที่รั่วไหลมีโอกาสดังแหล่งน้ำ ทีมระงับเหตุฉุกเฉินควรติดตั้งอุปกรณ์ดูดซับชนิดลอยน้ำได้ทั้งบริเวณเหนือและท้ายน้ำ เพื่อป้องกันไม่ให้น้ำมันที่รั่วไหลกระจายออกไป



CNPCHK (Thailand) Ltd.

12. วัสดุที่ปนเปื้อนน้ำมัน เช่น ดินที่มีการปนเปื้อน วัสดุดูดซับที่ใช้แล้ว ให้กำจัดเช่นเดียวกับของเสียอันตราย

ทั้งนี้ บริษัทได้แบ่งเจ้าหน้าที่ตามหน้าที่รับผิดชอบ ไว้ดังนี้

ผู้จัดการภาคสนาม(ฝ่ายผลิต) ต้องควบคุมสถานการณ์ที่เกิดเหตุ ออกคำสั่งต่อทีมระงับเหตุฉุกเฉิน ประสานงานกับเจ้าหน้าที่ตำรวจ เจ้าหน้าที่ดับเพลิง บริษัทจัดการน้ำมัน รั่วไหล รถพยาบาล และประชาชน จัดทำรายงานอุบัติการณ์เมื่อสถานการณ์กลับเข้าสู่ภาวะปกติ

Rig Manager เป็นผู้เชี่ยวชาญควบคุมเหตุฉุกเฉินในระหว่างการเจาะหลุม เฉพาะ

ทีมระงับเหตุฉุกเฉิน ต้องสนับสนุนการทำงานของผู้จัดการภาคสนาม ป้องกันการรั่วไหลเพิ่มเติม และปฏิบัติการรับมือการรั่วไหลขั้นต้น

ผู้ประสานงานภาคสนาม ต้องติดต่อขอความช่วยเหลือจากภายนอก และสำนักงานใหญ่ที่กรุงเทพฯ เป็นผู้ติดต่อกับสื่อมวลชนต่าง ๆ จัดหาการสนับสนุนตามที่ผู้จัดการภาคสนามร้องขอ ตรวจสอบรายงานอุบัติเหตุ และจัดให้มีการสอบสวนอุบัติเหตุ เมื่อเหตุการณ์เข้าสู่สภาวะปกติ

พนักงานอื่น ต้องไปรวมตัวที่จุดรวมพล ซึ่งจัดไว้บริเวณใกล้กับพื้นที่ทางเข้าออกฐานหลุมผลิต และรอคำสั่งจากผู้จัดการภาคสนาม หรือผู้จัดการฐานปฏิบัติการ

ในกรณีที่บริษัทต้องการความช่วยเหลือจากหน่วยงานภายนอก จะดำเนินการตามผังการประสานงานกับหน่วยงานภายนอก ดังแสดงในรูปที่ 3 ซึ่งได้ผนวกเข้ากับแผนผังการป้องกันและบรรเทาสาธารณภัยจากสารเคมีและวัตถุอันตรายระดับจังหวัดของจังหวัดสุโขทัยและกำแพงเพชร

หมายเลขโทรศัพท์ฉุกเฉิน

ในการติดต่อประสานงานเมื่อเกิดเหตุฉุกเฉินกรณีน้ำมันรั่วไหล ผู้จัดการภาคสนามและวิศวกรภาคสนามของบริษัท จะใช้หมายเลขโทรศัพท์ฉุกเฉิน ดังนี้



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ตารางที่ 1 หมายเลขโทรศัพท์ฉุกเฉินในการติดต่อประสานงานกรณีฉุกเฉิน

หน่วยงาน	หมายเลขโทรศัพท์
บริษัท ซีเอ็นพีซีเอชเค (ไทยแลนด์) จำกัด สำนักงานใหญ่ที่กรุงเทพฯ สำนักงานภาคสนาม	02-2606181-3 055-712274, 089-8102237 (คุณอนุเทพ สร้อยทอง)
บริษัทจัดการน้ำมันรั่วไหล บริษัท เวส แมเนจเม้นท์ สยาม จำกัด(WMS)	02-2610264
กรมเชื้อเพลิงธรรมชาติ สำนักงานพลังงานจังหวัดกำแพงเพชร สำนักงานพลังงานจังหวัดสุโขทัย	02-7943357 055-705136 055-612410
อำเภอในพื้นที่ ที่ว่าการอำเภอพรายกระด้าง	055-761489, 055-761321, 055-761724
ที่ว่าการอำเภอลานกระบือ ที่ว่าการอำเภอศรีมณเฑียร	055-76-9050 055-695194
อบต.ในพื้นที่ อบต.วังตะแบก ทต.คลองพิไกร อบต.บึงทับแรด อบต.ลานกระบือ อบต.หนองหลวง อบต.ทุ่งยางเมือง อบต.หนองจิก	055- 749786 055-741934 055-701237 055-856518 055-857771-3 055-613566 055-613744
หน่วยราชการที่มีระดับเพลิงในพื้นที่ สำนักงานป้องกันและบรรเทาสาธารณภัยจังหวัดกำแพงเพชร ศูนย์ป้องกันและบรรเทาสาธารณภัยเขต 8 สำนักทางหลวงชนบทจังหวัดกำแพงเพชร แขวงทางบกกำแพงเพชร สำนักงานป้องกันและบรรเทาสาธารณภัยจังหวัดสุโขทัย สำนักทางหลวงชนบทจังหวัดสุโขทัย แขวงทางบกสุโขทัย	055-705048, 055-705050, 055-705092, 055-705104 055-710396-9 055-710031 055-799345 055-612415 055-611362 055-611258
สถานีตำรวจ สถานีตำรวจภูธรพรานกระด้าง จังหวัดกำแพงเพชร สถานีตำรวจภูธรลานกระบือ จังหวัด กำแพงเพชร สถานีตำรวจภูธรศรีมณเฑียร จังหวัดสุโขทัย	055-761191 055-769124 055-695131



หน่วยงาน	หมายเลขโทรศัพท์
โรงพยาบาล/สำนักงานสาธารณสุขใกล้เคียง	
โรงพยาบาลพ란กระต่าย	055-775675-9
โรงพยาบาลลานกระบือ	055-769085
โรงพยาบาลคีรีมาศ	055-695145
สำนักงานสาธารณสุขอำเภอพ란กระต่าย	055-5761015
สำนักงานสาธารณสุขอำเภอลานกระบือ	055-769126
สำนักงานสาธารณสุขอำเภอกีรีมาศ	055-695204
ผู้ประกอบการสำรวจปีโตรเลียมรายอื่นที่อยู่ในพื้นที่ใกล้เคียง	
บริษัท ปตท.สผ.สยาม จำกัด (อ.ลานกระบือ จ.กำแพงเพชร)	055-731150
บริษัท สยามโมเอโกะ จำกัด	02-6343315

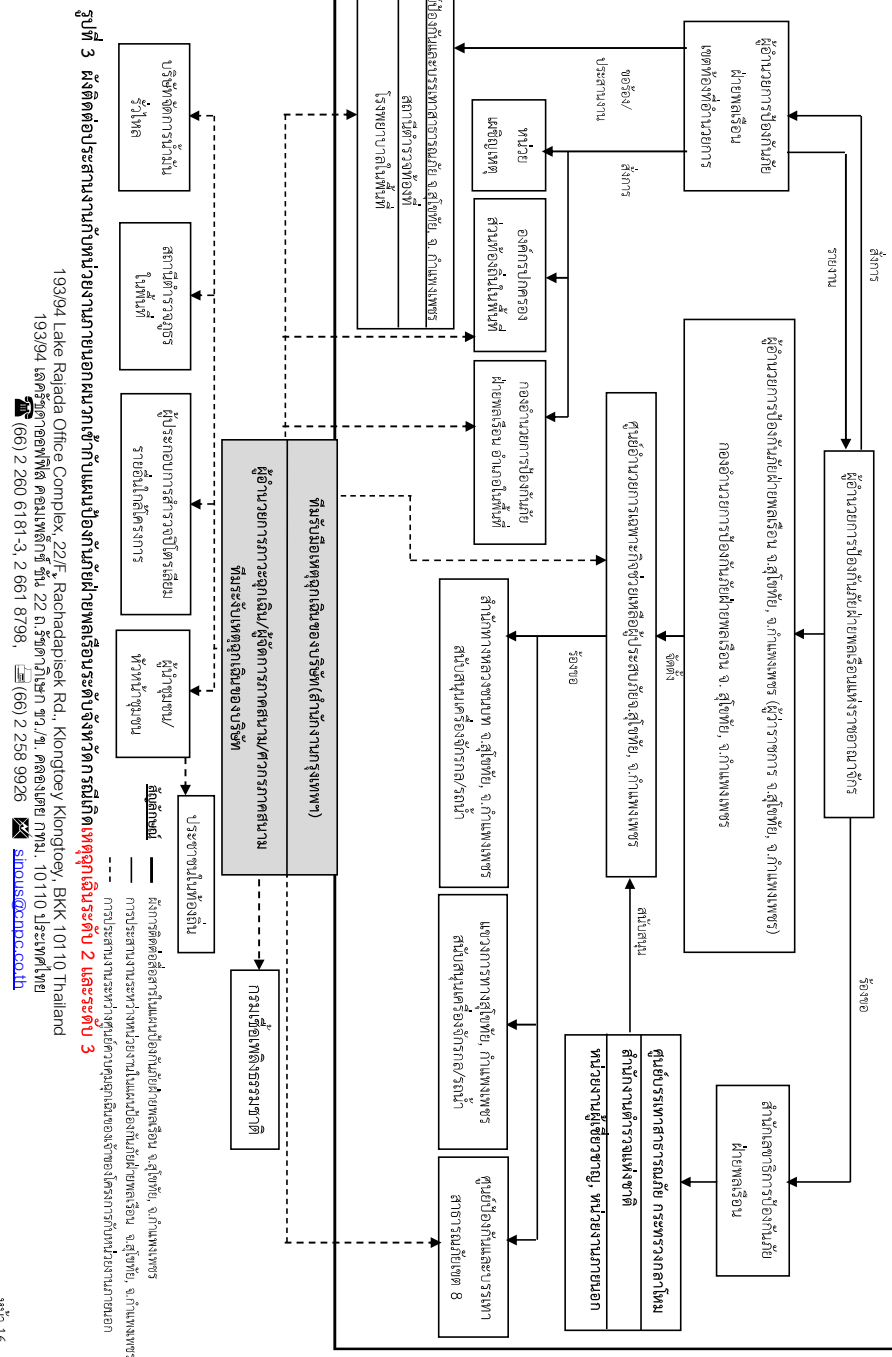
มาตรการฟื้นฟู ภายหลัง เกิดเหตุการณ์ฉกฉวย

เมื่อเหตุการณ์เข้าสู่ภาวะปกติแล้วควรมีการตั้งคณะกรรมการเพื่อตรวจสอบเหตุการณ์ที่เกิดขึ้นเพื่อ

- 1) ตรวจสอบแหล่งต้นกำเนิดของเหตุการณ์, พื้นที่ที่เกิดเหตุ และสาเหตุ
- 2) ประเมินความเสียหายต่างๆ ที่เกิดขึ้น เช่น ทรัพย์สินของบริษัท, ความเสียหายทางโอกาส, การหยุดการทำงาน, เศรษฐกิจของชุมชน, สิ่งแวดล้อมและชุมชนรอบข้าง เป็นต้น
- 3) การกลับไปปฏิบัติงาน โดยคำนึงถึงความปลอดภัยเป็นสำคัญรวมทั้งการเยียวยาและชดเชยค่าเสียหายแก่ผู้ที่ได้รับผลกระทบทั้งทางตรงและทางอ้อม นอกเหนือไปจากนั้นควรมีการวางแผนฟื้นฟู

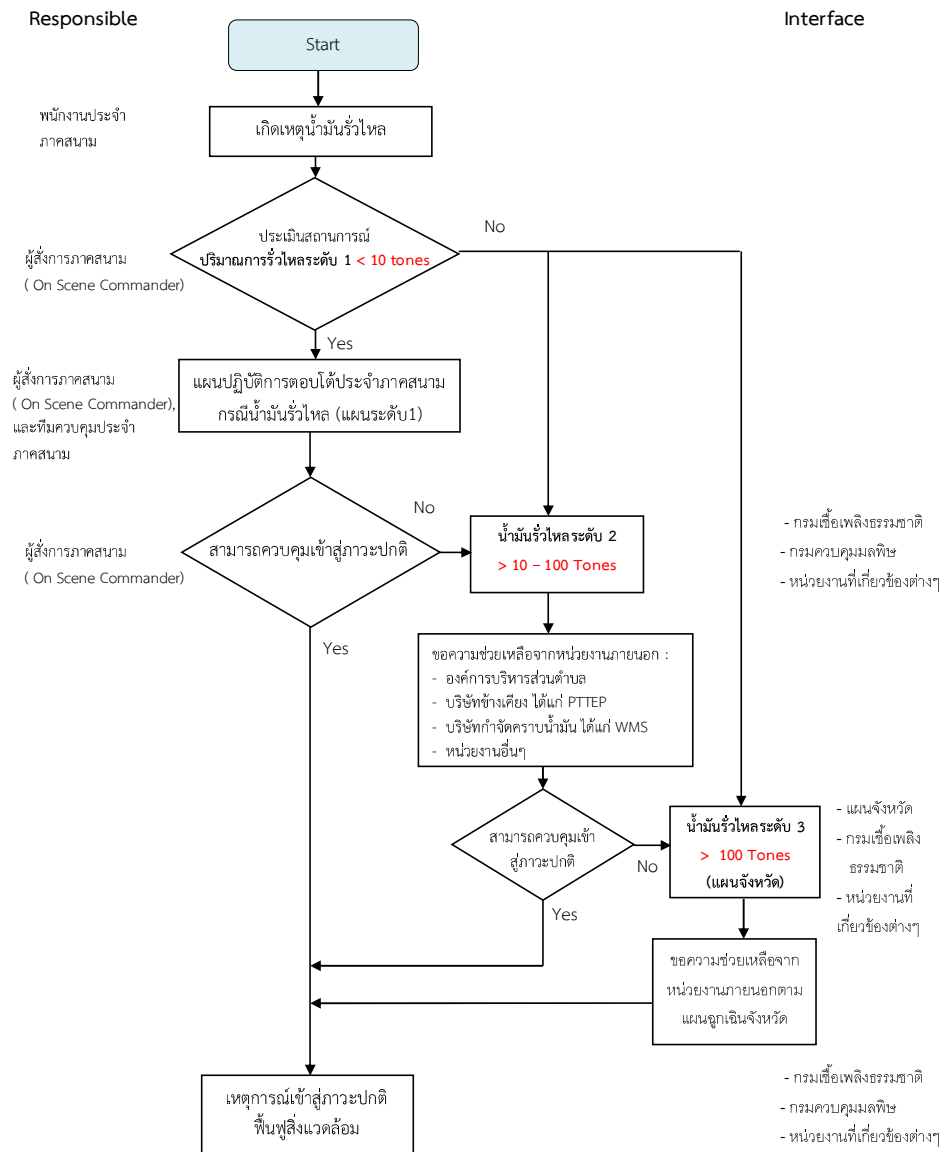
สภาพแวดล้อมที่ได้รับผลกระทบเช่นกัน โดยกำหนดแนวปฏิบัติดังนี้

- วางแผนดำเนินการซ่อมบำรุง ส่วนที่เสียหายให้กลับมามีคืนโดยเร็ว
- ตรวจสอบติดตามคุณภาพสิ่งแวดล้อมตามมาตรฐานที่กำหนด ในบริเวณที่ได้รับผลกระทบ อย่างต่อเนื่องจนกว่าค่าไม่เกินมาตรฐาน
- ประสานสัมพันธ์ให้ชุมชนและหน่วยงานที่เกี่ยวข้องให้รับทราบเกี่ยวกับการฟื้นฟูพื้นที่อย่างต่อเนื่องเพื่อคลายความกังวลกับเหตุการณ์

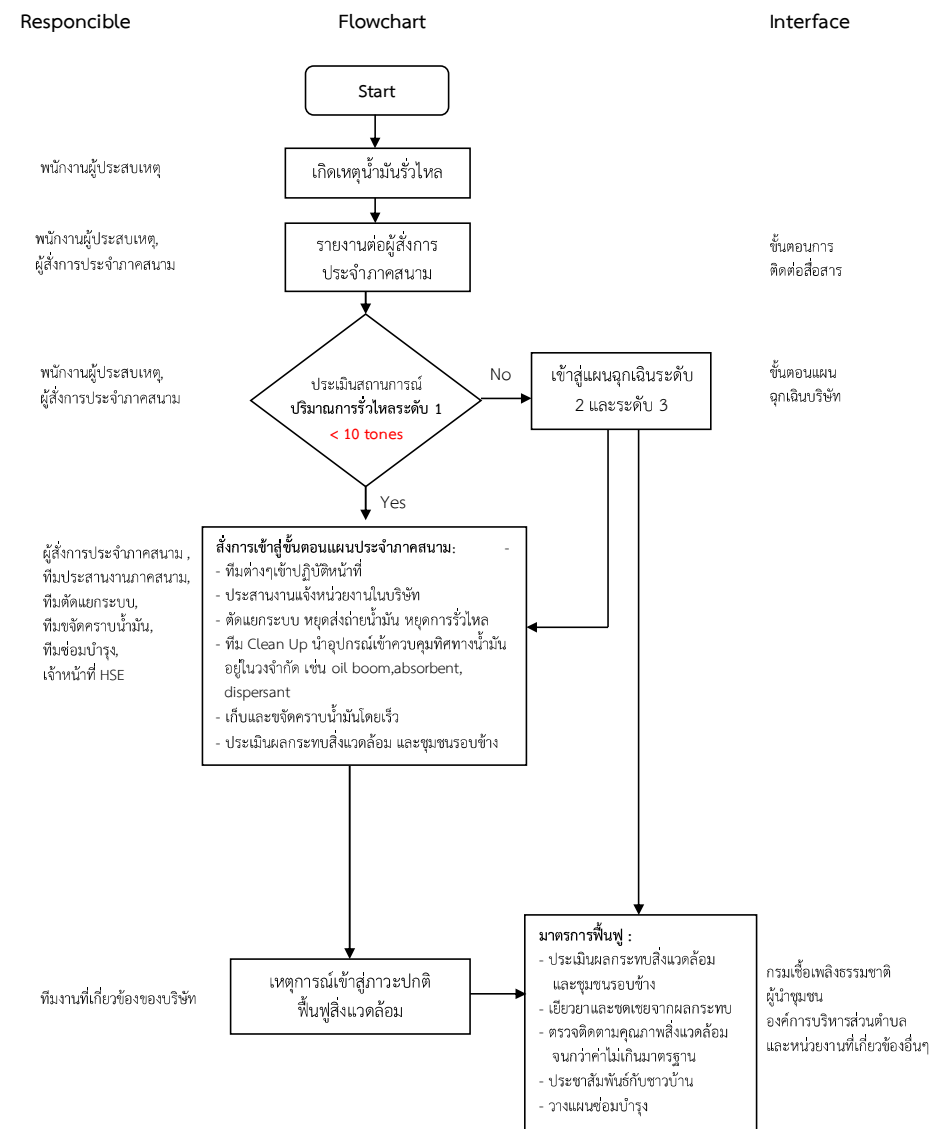




Flow chart 1: แผนฉุกเฉินกรณีน้ำมันรั่วไหล (Oil Spill Response Plan)

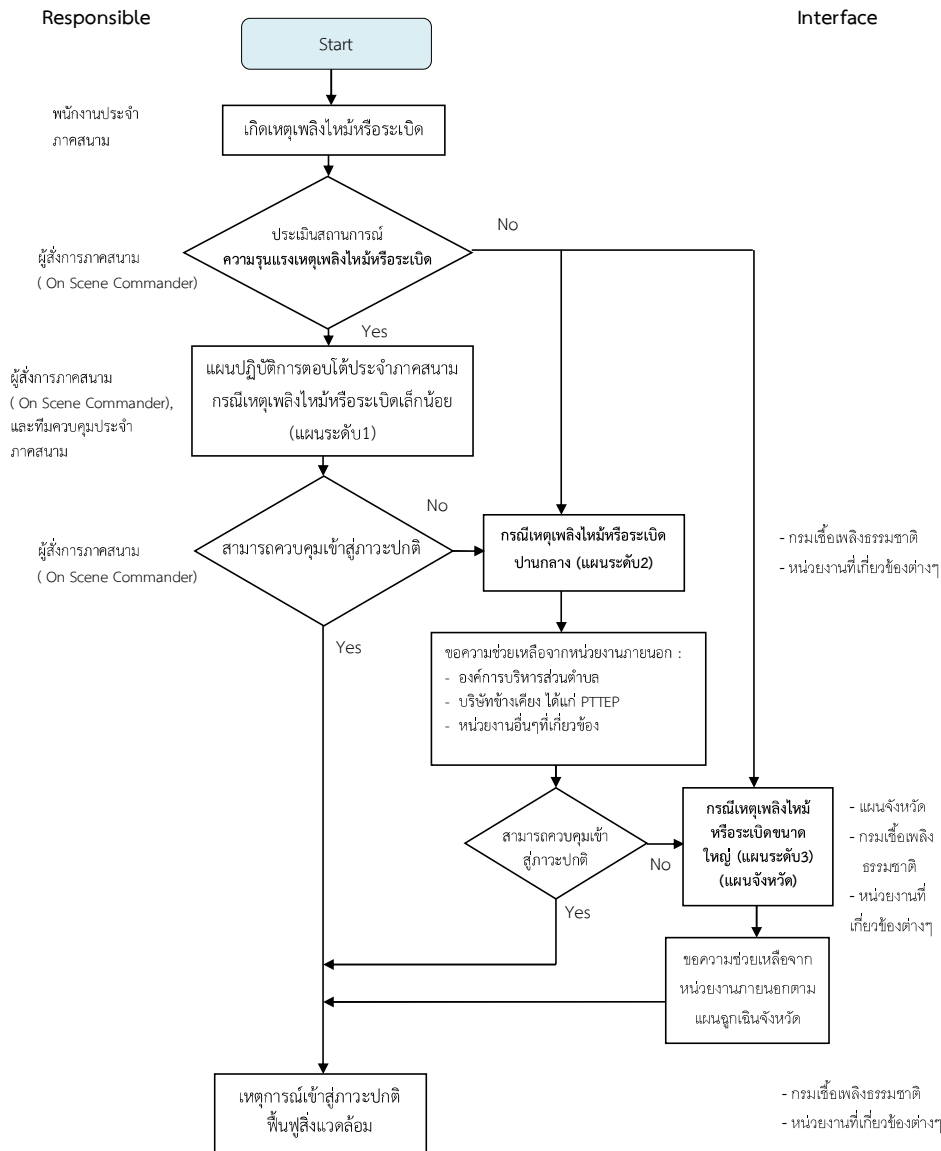


Flow chart 2: แผนปฏิบัติการตอบโต้ประจำภาคสนามกรณีน้ำมันรั่วไหล

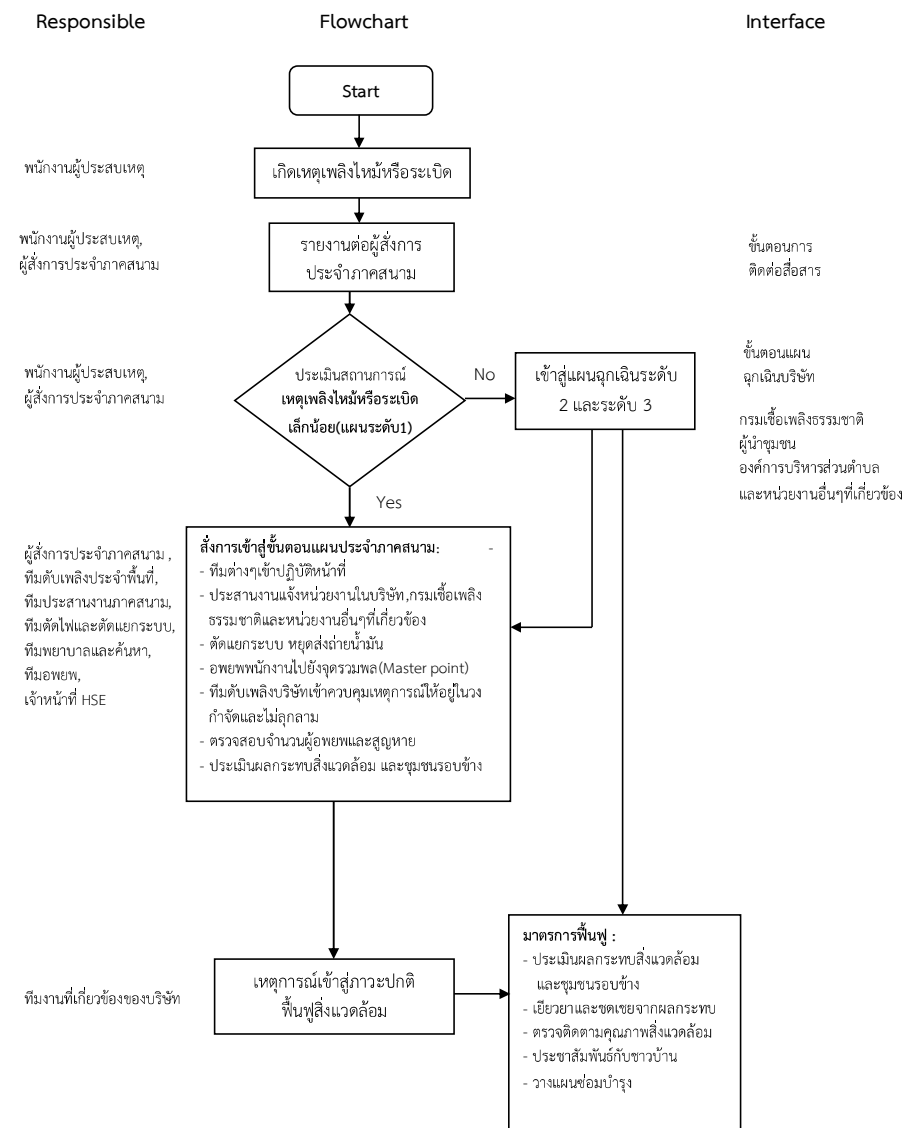




Flow chart 3: แผนฉุกเฉินกรณีเหตุเพลิงไหม้หรือระเบิด(Fire&Explosive Case Response Plan)



Flow chart 4: แผนปฏิบัติการตอบโต้ประจำภาคสนามกรณีเหตุเพลิงไหม้หรือระเบิด





บริษัท ซีเอ็นพีซีเอชเค (ไทยแลนด์) จำกัด

รายงานผลการปฏิบัติตามมาตรการป้องกันและแก้ไขผลกระทบสิ่งแวดล้อม และมาตรการติดตามตรวจสอบผลกระทบสิ่งแวดล้อม
โครงการผลิตปิโตรเลียมพื้นที่ผลิต L1/64 บึงหญ้า แปลงสำรวจบนบกหมายเลข L1/64 พื้นที่ผลิตบึงหญ้าตะวันตก-หนองสระ
และพื้นที่ผลิตบึงหญ้าตะวันตก-หนองสระส่วนขยาย แปลงสำรวจบนบกหมายเลข L21/43 จังหวัดสุโขทัย และจังหวัดกำแพงเพชร
ฉบับเดือนมกราคม - มิถุนายน พ.ศ.2567

ภาคผนวก ข.7

เอกสารข้อมูลความปลอดภัยของสารเคมี (SDS)

ระยะเจาะหลุมปิโตรเลียม

Sichuan Oil & Gas Engineering Company of SPA

Material Safety Data Sheet

Revision Date:09/23/2003

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: CALCIUM MUD

Synonyms: Bentonite in powder; powder

Chemical Family: Mineral

Application: thickening agent; suspending agent

Manufacturer/supplier:

Shandong Weifang Fumaying Bentonite Plant

Sichuan Oil & Gas Engineering Company of SPA

Telephone: 028-86011965

Emergence Telephone:028-86011965

Prepare By:

Telephone: 028-8330871

2. COMPOSITION/INFORMATION ON INGREDIENT

<u>Substance</u>	<u>Weight Percent (%)</u>	<u>ACGIH TLV-TWA</u>	<u>OSHAPEL-TWA</u>
Quartz; Cristobalite (14464-46-1)	0-1	0.05mg/m ³	1/2* <u>10mg/m³</u> % SiO ₂ +2
Quartz; Tridymite (15468-32-3)	0-1	0.05mg/m ³	1/2* <u>10mg/m³</u> % SiO ₂ +2
Bentonite	60-100	None	None
Quartz (14808-60-7)	1-5	0.05mg/m ³	<u>10mg/m³</u> % SiO ₂ +2

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION! LITTLE HEALTH HAZARD

May cause eye and respiratory irritation.

DANGER! CHRONIC HEALTH HAZARD

Breathing Quartz can cause lung disease, including silicosis and lung cancer. Quartz has also been associated with scleroderma and kidney disease.

This product contains quartz, Cristobalite and Tridymite which may become airborne with a visible cloud. Avoid breathing dust. Avoid creating dusty condition. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wearing a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employers.

4. FIRST AID MEASURES

Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin

Wash with soap and water. Get medical attention if irritation persists

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion

Diluted by drinking, never let the person who is unconscious eat anything and get medical attention if irritation persists.

Notes to Physician

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Non-inflammable
Flash Point/Range (C):	Non-inflammable
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Non-inflammable
Autoignition Temperature (C):	Non-inflammable
Flammability Limits in Air-lower (%):	Not Determined
Flammability Limits in Air-upper (%):	Not Determined

Fire Extinguishing Media:

All standard firefighting medium.

Special Exposure Hazards

None

Special Protective Equipment for Fire-Fighters

None

NFPA Ratings: Health 0, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES**Personal Precautionary Measures:**

Using appropriate equipment. Avoid breathing dust.

Environment precautionary Measures:

None

Procedure for Cleaning/Absorption:

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

7. HANDLING AND STORAGE**Handling Precautionary:**

This product contains quartz, Cristobalite and Tridymite which may become airborne with a visible cloud. Avoid breathing dust. Avoid creating dusty condition. Use only with adequate ventilation to keep exposure below recommended exposure limits. Material is slippery when wet.

Storage Information

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

8.EXPOSURE CONTROLS/ PERSONAL PROTECTION**Engineering controls:**

Use appropriate industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

Respiratory Protection

Wear the efficient granule respirator or equivalent dustproof mask when concentration surpasses recommended limit

Hand Protection

Normal work gloves

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures when removing or laundering clothing.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Color:	Light brown yellow
Odor:	odorless
PH:	8-10
Specific Gravity @ 20 C (Water=1):	2.55-2.65
Density @ 20 C (lbs./gallon):	21.30-22.10
Bulk Density @ 20 C (lbs./ft3):	50
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Very high
Freezing Point/Range (C):	Very high
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Insoluble water, decomposable
Solubility in Solvents (g/100ml):	Not Determined
Solubility in Sea Water (g/100ml):	Insoluble, Sinks
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid:	Not anticipated
Incompatibility (Materials to Avoid):	Hydrofluoric acid
Hazardous Decomposition Products:	

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

Additional Guidelines: Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure

Eye or skin contact, inhalation.

Inhalation

Inhaled crystalline silica in the form of quartz or cristobalite from occupational source is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2)

Breathing silica dust may cause irritation of the nose, throat and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/ Carcinogenicity" subsection below).

Skin Contact

May cause skin irritation.

Eye Contact

May cause eye irritation.

Ingestion

Not known.

Aggravated Medical Conditions

Individuals with respiratory disease, including but not limit to asthma and bronchitis, or subject to eye irritation, should not be exposed to the dust.

Chronic Effects/Carcinogenicity

Silicosis Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes fatal lung disease called silicosis. Symptoms including cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1-carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A-possible carcinogen to humans). Refer to IARC Monograph 68, Silica. Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen".

Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

Other Information

For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine Volume 155, pages 761-768 (1997).

Toxicity Tests

Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined

Carcinogenicity:

Refer to IARC monograph 68 Silica, some silicates and Organic Fibres (June 1997)

Genotoxicity:	Not determined
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Reproductive/Developmental Toxicity:	Not determined
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12. ECOLOGICAL INFORMATION

Mobility (Waste/Soil/Air)	Not determined
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Persistence/Degradability	Not determined
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Bio-accumulation	Not determined
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Ecotoxicological Information

Toxicity test:	EC ₅₀ /96h test, > 10 ⁵ ppm, innocuity
Acute Crustaceans Toxicity:	Not determined
Acute Algae Toxicity:	Not determined

Chemical Fate Information:	Not determined
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Other Information:	Not applicable
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13. DISPOSAL CONSIDERATIONS

Disposal Method

Bury in a licensed landfill according to Chinese government and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

Not restricted

Air Transportation

ICAO/IATA

Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

PRC Regulations

Chinese Toxic Substance Control Act Inventory

All components listed on inventory.

16. OTHER INFORMATION

Not applicable.

Additional Information

For additional information on the use of this product, contact your local SOGEC representative.

For questions about the Material Safety Data Sheet for this or other SOGEC products, contact Product Stewardship at 028-86011965.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the users.



Safety Data Sheet

PAC
Polyanionic Cellulose

SECTION 1 – IDENTIFICATION

Supplier: Novamen Inc.
111A, 4818 - 50th Avenue
Red Deer, AB T4N 4A3
Phone Number: 403-348-5956

Product Name: PAC Polyanionic Cellulose
Product Description: N/A

Emergency Contacts:
CANUTEC 24-hour Emergency Phone Number: 1-613-996-6666
Chemtrec 24-hour Emergency Phone Number: 1-800-424-9300

SECTION 2 – HAZARD IDENTIFICATION

Caution: Wet floors on which this powder is spilt may become very slippery. This powder when dispersed in air represents an explosion hazard.

Short Term Exposure: No permanent effects on humans known from discontinuous short-term exposure when used as directed.

Long Term Exposure: No permanent effects on humans known from discontinuous long-term exposure when used as directed.

Ecology: No long-term ecological effects.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a substance in conformance to EC directives information on hazardous ingredients

EINECS No.: Unlisted
Hazard Symbols: None listed
Risk Phrases: None listed

SECTION 4 – FIRST AID MEASURES

Skin:
Wash off immediately with plenty of soap and water.

Eyes:
Flush with plenty water.

Ingestion:
Drink large quantities of milk or water. Wash mouth out with water.

Inhalation:
Move individual into fresh air. Treat any irritation symptomatically. If necessary, seek medical attention.

SECTION 5 – FIRE-FIGHTING MEASURES

Conditions to Avoid:
Keep away from heat, sparks and flames. Avoid excess dust in the atmosphere since this is an explosion hazard in the presence of electrical sparks and static.

Fire Fighting Measures:
Fight the fire using water spray, sand, dry powder or foam.

Protective Equipment:
Impervious gloves. Use goggles. Use a dust mask.

Combustion Products/Hazardous decomposition:
Carbon monoxide, carbon dioxide, steam and smoke.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Caution:
Wet floors on which this powder is spilt may become very slippery. This powder when dispersed in air represents an explosion hazard.

Spillage:
Sweep up this product for use or place in a container for disposal.

SECTION 7 – HANDLING AND STORAGE

Handling:
Handle in a well-ventilated area. The fine particles and powder should be regarded as an inert, nuisance dust with a threshold limit value of 10mg/m³ for total dust and of 3mg/m³ for the respirable portion. Avoid static build-up when emptying big bags. Ground all equipment and attach a grounding cable to the bag grounding connection.

Storage:
Product should be stored, under cover, in a clean well-ventilated area. Maintain a clean area by removing dust. Keep away from heat, sparks and other sources of ignition. Store in a dry area.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls:
Handle in a well-ventilated area. Normal industrial hygiene measures should be sufficient.

Protective Equipment:
Impervious gloves. Use goggles. Use a dust mask.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Form: Free flowing powder or granulate
Colour: Light cream to white
Odour: Odourless
Solubility: Complete in water
pH value (25°C): 6.5-8.5 (2% solution)
Dust explosion data: N/A
Auto-flammability (°C): ~370 (dust)
Explosion Limit-lower (g/m³): 165 (dust)
Melting Point: 300°C

SECTION 10 – STABILITY AND REACTIVITY

Stability:

This product is chemically stable.

Reactivity:

No additional hazardous chemicals are known to be formed when used as directed in this application.

SECTION 11 – TOXICOLOGICAL INFORMATION

Dermal:

This product is not absorbed percutaneously in rats, rabbits or humans. This product is believed not to cause skin irritation or sensitization.

Eyes:

This product should not be regarded as an eye irritant.

Oral:

This product is not metabolized in the body. No adverse effects known as a result of ingestion. LD50 rat > 2000 mg/kg.

Inhalation:

No effects known.

SECTION 12 – ECOLOGICAL INFORMATION

Acute Fish Toxicity:

The four days median tolerance limit (TL50) of rainbow trout and bluegills under static conditions is greater than 100 parts product per million parts of water. 96 h static test LC 50 *Oncorhynchus mykiss* (rainbow trout): > 100.00 mg/L. 96 h static test LC 50 *Lepomis macrochirus* (Bluegill sunfish): > 100.00 mg/L. In addition, no adverse reactions were noted in the fish exposed to this product. These results demonstrate that PAC has a low order of toxicity in fish.

Biodegradability:

This product does not represent a long term ecological problem. It is slowly biodegradable.

WGK Classification:

1.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal:

Waste incineration or special disposal with the approval of the responsible local authority.

EWC Classification:

07 07 99

SECTION 14 – TRANSPORT INFORMATION

Not hazardous for sea transport according to IMO IMDG CODE.

RID/ADR:

No classification assigned

ADNR:

No classification assigned

IMDG:

No classification assigned

ICAO/IATA-DGR:

No classification assigned

UN Number:

No classification assigned

SECTION 15 – REGULATORY INFORMATION

Labeling according to EC directives

Danger symbols:

None

Risk Phrases:

None

Safety Phrases:

None

SECTION 16 – OTHER INFORMATION

SDS Prepared by:

Novamen HSE Department

Original Preparation Date:

November 16, 2017

Revision Date:

Revision Number:

Reason for Revision:

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

Sichuan Oil & Gas Engineering Company of SPA

Material Safety Data Sheet

Revision Date:09/23/2003

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: POLYMER ENCAPSULATING AGENTS

Synonyms: FA367

Chemical Family: oil-well drilling fluid additive

Application: thickening agent; encapsulating agents

Manufacturer/supplier:

Chemical Plant of Zhengzhou Yuhua Ltd. Co.

Sichuan Chengdu Jialing Chemical Plant

Sichuan Oil & Gas Engineering Company of SPA

Telephone: 028-86011965

Emergence Telephone:028-86011965

Prepare By:

Telephone: 028-8330871

2. COMPOSITION/INFORMATION ON INGREDIENT

<u>Substance</u>	<u>Weight Percent (%)</u>	<u>ACGIH TLV-TWA</u>	<u>OSHA PEL-TWA</u>
Acrylamide; Acrylic polymer	80-95		
Anion Monomer	1-15		
Cationic Monomer	1-8		
Aqua	1-10		

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION! LITTLE HEALTH HAZARD

May cause eye and respiratory irritation.

DANGER! CHRONIC HEALTH HAZARD

FA367 is the granular white solid, which may not become airborne. Avoid breathing dust. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wearing a dustproof mask when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employers.

4. FIRST AID MEASURES

Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin

Wash with soap and water. Get medical attention if irritation persists

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion

Diluted by drinking, never let the person who is unconscious eat anything and get medical attention if irritation persists.

Notes to Physician

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	>392
Flash Point/Range (C):	>200
Flash Point Method:	Not Determined
Autoignition Temperature (F):	>250
Autoignition Temperature (C):	>120
Flammability Limits in Air-lower (%):	Not Determined
Flammability Limits in Air-upper (%):	Not Determined

Fire Extinguishing Media:

All standard firefighting medium.

Special Exposure Hazards

None

Special Protective Equipment for Fire-Fighters

None

NFPA Ratings: Health 0, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures:

Using appropriate equipment. Avoid creating and breathing dust.

Environment precautionary Measures:

Forbidden throwing away. Store and transport appropriately, use correctly

Procedure for Cleaning/Absorption:

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

7. HANDLING AND STORAGE

Handling Precautionary:

This product may not become airborne without a visible cloud. Avoid breathing dust when handling. Use only with adequate ventilation to keep exposure below recommended exposure limits. Material is slippery when wet.

Storage Information

Store in dry and shady condition.

8.EXPOSURE CONTROLS/ PERSONAL PROTECTION

Engineering controls:

Use appropriate industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

Respiratory Protection

Wear the efficient granule respirator or equivalent dustproof mask when concentration surpasses recommended limit

Hand Protection

Normal work gloves

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures when removing or laundering clothing.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Color:	White or yellow
Odor:	odorless
PH:	7.5-9
Specific Gravity @ 20 C (Water=1):	1.05-1.15
Density @ 20 C (lbs./gallon):	8.7-9.6
Bulk Density @ 20 C (lbs./ft3):	Not Determined
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	a bit
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	0.1-3.0
Solubility in Solvents (g/100ml):	Not Determined
Solubility in Sea Water (g/100ml):	0.1-3.0
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	200-300 ten thousand

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid:	Not anticipated
Incompatibility (Materials to Avoid):	Not determined
Hazardous Decomposition Products:	Produce a bit of ammonia gas after hydrolyze
Additional Guidelines:	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure

Eye or skin contact, inhalation.

Inhalation

Breathing the product dust may cause irritation of the nose, throat and respiratory passages.

Breathing this dust may not cause noticeable injury or illness. Inhalation of dust may also have serious chronic health effects.

Skin Contact

May cause skin irritation.

Eye Contact

May cause eye irritation.

Ingestion

Not known.

Aggravated Medical Conditions

Individuals with respiratory disease, including but not limit to asthma and bronchitis, or subject to eye irritation, should not be exposed to the dust.

Chronic Effects/Carcinogenicity Not Known.

Other Information Not Known

Toxicity Tests

Oral Toxicity: Not determined

Dermal Toxicity: Not determined

Inhalation Toxicity: Not determined

Primary Irritation Effect: Not determined

Carcinogenicity: Not determined

Genotoxicity: Not determined

Reproductive/Developmental Toxicity: Not determined

12. ECOLOGICAL INFORMATION

Mobility (Waste/Soil/Air) Not determined

Persistence/Degradability Degradable BOD₅/COD_{CR}=16

Bio-accumulation Not determined

Ecotoxicological Information

Toxicity test: EC₅₀/96h test, > 10⁵ppm, innocuity

Acute Crustaceans Toxicity: No Toxicity

Acute Algae Toxicity: No Toxicity

Chemical Fate Information: Not determined

Other Information: Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method

Bury in a licensed landfill according to Chinese government and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

Not restricted

Air Transportation

ICAO/IATA

Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

PRC Regulations

Chinese Toxic Substance Control Act Inventory

All components listed on inventory.

16. OTHER INFORMATION

Not applicable.

Additional Information

For additional information on the use of this product, contact your local SOGEC representative.

For questions about the Material Safety Data Sheet for this or other SOGEC products, contact Product Stewardship at 028-86011965.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this combination with other materials or in any process. Final determination of suitability of any

SICHUAN OIL & GAS ENGINEERING COMPANY OF SPA

MATERIAL SAFETY DATA SHEET

Revision Data: 23/09/2003

1. CHEMICAL PRODUCT AND COMPAN INFORMATION

Product Name: POLYMERIC VISCOSITY-REDUCING AGENT
Synonyms: XY-27 Inhibitive Viscosity-reducing Agent, tinner Copolymer
Chemical Family: Drilling Fluid Additive, Inorganic Compound
Application: Inhibitor

Manufacturer/Supplier

Chemical Plant of Zhenzhou Yuhua Co. Ltd./ Sichuan Oil & Gas Engineering Company of SPA

Telephone: 028-86011965
Emergency Telephone: 028-86011965

Prepared By

Telephone: 028-83330871

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Substance</u>	<u>Weight Percent%</u>	<u>ACGIH TLV-TWA</u>	<u>OSHA PEL-TWA</u>
Low Molecular Polymer	85-95%		
Moisture	1-10%		
Monomer	0.1-1%		

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION! – LOW HEALTH HAZARD, THIS PRODUCTS IS GRANULAR AND BE CAREFUL WHEN IT HAS BEEN USED.

May cause eyes , skin and respiratory irritation.

DANGER! - CHRONIC HEALTH HAZARD: Not determined

Wear glasses when use the product.

4. FIRST AID MEASURES

Skin

Wash with soap and water. Get medical attention if irritation persists.

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15minutes and get medical attention if irritation persists.

Ingestion

Drink water, not put any thing in someone's mouth whom is unconscious. Get medical attention if irritation persists.

Notes to Physician

Treat symptomatically

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	>392
Flash Point/Range (C):	>200
Flash Point Method:	>250
Autoignition Temperature (F):	>120
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air – Lower (%):	Not Determined
Flammability Limits in Air – Upper (%):	Not Determined

Fire Extinguishing Media

All standard firefighting media.

Special Exposure Hazards

Not applicable

Special Protective Equipment for Fire-Fighters

Not applicable

NFPA Ratings: Health: 0 Flammability: 0 Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures

Use appropriate protective equipment. Avoid creating and breathing dust.

Environment Precautionary Measures

Collect using dustless method and hold for appropriate disposal.

7. HANDLING AND STORAGE

Handling Precautions

Use good housekeeping in storage and work areas to prevent moisture. And avoid sunshine, heat and wet when transporting it.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use approved industrial ventilation and local exhaust as required to maintain the concentration .

Respiratory Protection

Wear a permitted respirator when the concentration of the product is excess the limits 2mg/m³.

Hand Protection

Normal work gloves.

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing..

Eyes Protection

Wear safety glasses or goggles to protect against exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid small grain
Color:	White
Odor:	No
PH:	7-9
Specific Gravity @ 20C (Water=1):	1.10-1.25
Density @ 20C (lbs./gallon):	9.2-10.4
Bulk Density @ 20C (lbs./ft ³):	Not Determined
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20C(mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Small
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	0.1-15
Solubility in Solvents (g/100ml):	Not Determined
Solubility in Sea Water (g/100ml):	0.1-15
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20C (centipoises):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined

Patrtition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	50000-100000

10. STABILITY AND REACTIVITY

Stability Data:	Stable in air normal temperature Decomposing when downhole temperature is above 121 °C.
Hazardous Polymerization:	Not determined
Conditions to Avoid	Not determined
Incompatibility (Material to Avoid):	Not determined
Hazardous Decomposition Products:	Not determined
Additional Guidelines:	Not determiend

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure

Eyes of skin contact, inhalation.

Skin Contact

May cause mechanical skin irritation.

Eye Contact

May cause eye irritation.

Ingestion

None known. .

Aggravated Medical Conditions

Not determined.

Chronic Effects/Carcinogenicity

Not determined.

Toxicity Tests

Oral Toxicity:	Not Determined
Skin Toxicity:	Not Determined
Primary Irritation Effect:	Not Determined
Carcinogenicity:	Not Determined
Genotoxicity:	Not Determined
Reproductive/Developmental Toxicity:	Not Determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air):	Not determined
Persistence/Degradability:	Degradable
Bio-accumulation:	Not determined
Ecotoxicological Information	
Prawn Toxicity Test:	EC ₅₀ /96h test 58571ppm no toxicity
Acute Crustaceans Toxicity:	Not determined
Acute Algae Toxicity:	Not determined
Chemical Fate Information:	Not determined
Other Information:	Not determined

13. DISPOSAL CONSIDERATIONS

Disposal Method

Bury in a licensed landfill according to national and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

Transportation Department
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Other Shipping Information

Lables: None

15. REGULATORY INFORMATION

PRC Regulation

PRC TSCA Inventory
All components listed on inventory.

16. OTHER INFORMATION

Additional Information

For additional information on the use of this product, please contact with Sichuan Oil & Gas Engineering Company of SPA representatives.

For questions about the Material Safety Data Sheet for this or other Sichuan Oil & Gas Engineering Company of SPA products, please contact Product Service Department at 028-86011965.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.



potassium chloride 99,9 % KCl Ph. Eur., USP

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)
Date of issue: 01/11/2019 Revision date: 01/11/2019 Version: 10.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Trade name : potassium chloride 99,9 % KCl Ph. Eur., USP
Chemical name : potassium chloride
EC-No. : 231-211-8
CAS-No. : 7447-40-7
REACH authorisation exemptions : Exempted from REACH
Pharmaceutical industry, Manufacture of food products

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : Pharmaceutical industry
Manufacture of food products

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier K+S Minerals and Agriculture GmbH Bertha-von-Suttner-Str. 7 34131 Kassel - Germany T (+49) 561 9301-0 - F (+49) 561 9301-1753	Email competent person sds@kft.de
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1.4. Emergency telephone number

Emergency number : For Hazardous Materials [or Dangerous Goods] Incidents
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

No labelling applicable

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

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Name	Product identifier	%
potassium chloride	(CAS-No.) 7447-40-7 (EC-No.) 231-211-8	-

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: In all cases of doubt, or when symptoms persist, seek medical attention.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire. Water spray. Dry powder. Foam.
Unsuitable extinguishing media	: Strong water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire	: Toxic fumes may be released. Metal oxides.
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5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information	: Do not allow run-off from fire fighting to enter drains or water courses. Disposal must be done according to official regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area.
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6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8. "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment. Avoid sub-soil penetration. Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment	: Collect spillage.
Methods for cleaning up	: Mechanically recover the product. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal.
Other information	: Disposal must be done according to official regulations.

6.4. Reference to other sections

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Information for safe handling. See section 7. Concerning personal protective equipment to use, see section 8. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Protect from moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

potassium chloride (7447-40-7)	
DNEL/DMEL (Workers)	
Acute - systemic effects, dermal	910 mg/kg bodyweight/day
Acute - systemic effects, inhalation	5320 mg/m³
Long-term - systemic effects, dermal	303 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	1064 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, dermal	910 mg/kg bodyweight
Acute - systemic effects, inhalation	1365 mg/m³
Acute - systemic effects, oral	455 mg/kg bodyweight
Long-term - systemic effects, oral	91 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	273 mg/m³
Long-term - systemic effects, dermal	182 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	0.1 mg/l
PNEC aqua (marine water)	0.1 mg/l
PNEC aqua (intermittent, freshwater)	1 mg/l
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:
In case of repeated or prolonged contact wear gloves. EN 374. Nitrile rubber. Choosing the proper glove is a decision that depends not only on the type of material, but also on other quality features, which differ for each manufacturer. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer. Gloves must be replaced after each use and whenever signs of wear or perforation appear
Eye protection:
In case of dust production: protective goggles. EN 166

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Skin and body protection:
Wear suitable protective clothing. EN 340
Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. EN 143. Short term exposure. Dust production: dust mask with filter type P2. Breathing equipment is only to be used in order to handle the residual risk of short term jobs if all other risk minimizing measures have been carried out e.g. retention and/or local exhaust

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid.
Colour	: white.
Odour	: none to slight.
Odour threshold	: No data available
pH	: 8 (≥ 11) (Aqueous solution)
Relative evaporation rate (butylacetate=1)	: Not applicable
Melting point	: 770 °C
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: Not applicable
Relative vapour density at 20 °C	: Not applicable
Relative density	: No data available
Density	: 1.984 g/cm³
Solubility	: Water: 355 g/l (25°C)
Log Pow	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosive properties	: Product is not explosive.
Oxidising properties	: Non oxidizing.
Explosive limits	: Not applicable

9.2. Other information

Bulk density	: 1040 - 1130 kg/m³
Other properties	: No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

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10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

potassium chloride (7447-40-7)	
LD50 oral rat	3020 mg/kg bodyweight
Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 8 (≥ 11) (Aqueous solution)
Serious eye damage/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 8 (≥ 11) (Aqueous solution)
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Additional information	: Mutagenicity : Ames test : negative (OECD 471 method)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard	: Not classified (Not specifically applicable)

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long-term (chronic) : Not classified (Based on available data, the classification criteria are not met)

potassium chloride (7447-40-7)	
LC50 fish 1	880 mg/l (96h; Pimephales promelas; (OECD 203 method))
EC50 Daphnia 1	440 mg/l (48h; Daphnia magna; (OECD 202 method))
EC50 72h algae	> 100 mg/l (72 h; Desmodesmus subspicatus; (OECD 201 method))
NOEC chronic algae	> 100 mg/l (72 h; Desmodesmus subspicatus; (OECD 201 method))

12.2. Persistence and degradability

potassium chloride (7447-40-7)	
Persistence and degradability	Not applicable for inorganic substances.

12.3. Bioaccumulative potential

potassium chloride (7447-40-7)	
Bioaccumulative potential	Not applicable for inorganic substances.

12.4. Mobility in soil

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potassium chloride (7447-40-7)	
Mobility in soil	Expected to be highly mobile in soil
Ecology - soil	Not applicable.

12.5. Results of PBT and vPvB assessment

potassium chloride (7447-40-7)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6. Other adverse effects

Other adverse effects : No additional information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Disposal must be done according to official regulations. European waste catalogue. Do not discharge into drains or the environment. Do not dispose of with domestic waste.
Product/Packaging disposal recommendations : Recycle or dispose of in compliance with current legislation.
European List of Waste (LoW) code : 06 03 14 - solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
potassium chloride is not on the REACH Candidate List
potassium chloride is not on the REACH Annex XIV List
potassium chloride 99,9 % KCl Ph. Eur., USP is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.
potassium chloride 99,9 % KCl Ph. Eur., USP is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Other information, restriction and prohibition regulations : A safety data sheet is not required for this product under Article 31 of REACH. This Product Safety Information Sheet has been created on a voluntary basis.

15.1.2. National regulations
No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit
vPvB	Very Persistent and Very Bioaccumulative

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Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Data sources	: ECHA (European Chemicals Agency). Information provided by the manufacturer.
Department issuing data specification sheet:	: KFT Chemieservice GmbH Im Leuschnerpark. 3 64347 Griesheim Germany Phone: +49 6155-8981-400 Fax: +49 6155 8981-500 Safety Data Sheet Service: +49 6155 8981-522
Contact person	: Dr. Lisa Schmitt
Other information	: The versioning of the safety data sheet for this product begins with the version number 10.0 due to a change of the company's name on November 1, 2019.

KFT SDS EU 07
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET



Desco® Deflocculant

Version 3.3

Revision Date 2019-09-03

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name : Desco® Deflocculant
Material : 1016805

Use : Drilling Mud Additive

Company : Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:

Health:

866.442.9628 (North America)
1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431

Responsible Department : Product Safety and Toxicology Group
E-mail address : SDS@CPChem.com
Website : www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification

: Combustible dust
Eye irritation, Category 2A
Skin sensitization, Category 1
Carcinogenicity, Category 1A

SDS Number:100000013921

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Labeling

Symbol(s)



Signal Word

: Danger

Hazard Statements

: May form combustible dust concentrations in air.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H350: May cause cancer.

Precautionary Statements

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity:

IARC

Group 1: Carcinogenic to humans

Crystalline Silica 14808-60-7

NTP

Known to be human carcinogen

Crystalline Silica 14808-60-7

ACGIH

Suspected human carcinogen

Crystalline Silica 14808-60-7

SECTION 3: Composition/information on ingredients

Synonyms

: Drilling Mud Deflocculant

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Molecular formula

:

Mixture

Component	CAS-No.	Weight %
Methyl ester of sulfonated tannin	Proprietary	60 - 80
Ferrous Sulfate	17375-41-6	5 - 9
Chromium Acetate	1066-30-4	3 - 10
Crystalline Silica	14808-60-7	0.1 - 1

SECTION 4: First aid measures

General advice

:

Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

If inhaled

:

Call a physician or poison control center immediately. If unconscious, place in recovery position and seek medical advice.

In case of skin contact

:

If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact

:

Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed

:

Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

Flash point

:

Not applicable

Autoignition temperature

:

No data available

Unsuitable extinguishing media

:

High volume water jet.

Specific hazards during fire fighting

:

Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for fire-fighters

:

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

:

Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Fire and explosion protection

:

Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

Hazardous decomposition

:

No data available.

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Desco® Deflocculant		SAFETY DATA SHEET		
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products				
SECTION 6: Accidental release measures				
<p>Personal precautions : Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.</p> <p>Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.</p> <p>Methods for cleaning up : Keep in suitable, closed containers for disposal.</p>				
SECTION 7: Handling and storage				
Handling				
<p>Advice on safe handling : Avoid formation of respirable particles. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.</p> <p>Advice on protection against fire and explosion : Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.</p>				
Storage				
<p>Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.</p> <p>Use : Drilling Mud Additive</p>				
SECTION 8: Exposure controls/personal protection				
Ingredients with workplace control parameters				
US				
Components	Basis	Value	Control parameters	Note
Ferrous Sulfate	ACGIH	TWA	1 mg/m3	URT irr, skin irr, varies,
	OSHA Z-1-A	TWA	1 mg/m3	
Chromium Acetate	OSHA Z-1	TWA	0.5 mg/m3	
	ACGIH	TWA	0.5 mg/m3	URT irr, skin irr, (I), A4, varies,
	OSHA Z-1-A	TWA	0.5 mg/m3	
	CAL PEL	PEL	0.5 mg/m3	
Crystalline Silica	OSHA Z-3	TWA	250mppcf / %SiO2+5	(f), a, b, respirable
	OSHA Z-3	TWA	10mg/m3 / %SiO2+2	(f), e, respirable
	OSHA Z-3	TWA	0.1 mg/m3	Respirable fraction
	OSHA Z-1-A	TWA	0.1 mg/m3	respirable dust fraction
	ACGIH	TWA	0.025 mg/m3	lung cancer, pulm
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			fibrosis, A2, Respirable fraction
	OSHA Z-1	TWA	0.05 mg/m3
	OSHA Z-1	TWA	0.05 mg/m3
			(7), (respirable dust)
(i) Adopted values or notations enclosed are those for which changes are proposed in the NIC (7) See Table Z-3 for the exposure limit for any operations or sectors where the exposure limit in § 1910.1053 is stayed or is otherwise not in effect. (f) This standard applies to any operations or sectors for which the respirable crystalline silica standard, 1910.1053, is stayed or is otherwise not in effect. a Millions of particles per cubic foot of air, based on impinger samples counted by light-field techniques. A2 Suspected human carcinogen A4 Not classifiable as a human carcinogen b The percentage of crystalline silica in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable. e Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics: Aerodynamic diameter (unit density sphere): 2; Percent passing selector: 90 Aerodynamic diameter (unit density sphere): 2.5; Percent passing selector: 75 Aerodynamic diameter (unit density sphere): 3.5; Percent passing selector: 50 Aerodynamic diameter (unit density sphere): 5.0; Percent passing selector: 25 Aerodynamic diameter (unit density sphere): 10; Percent passing selector: 0 The measurements under this note refer to the use of an AEC (now NRC) instrument. The respirable fraction of coal dust is determined with an MRE; the figure corresponding to that of 2.4 mg/m3 in the table for coal dust is 4.5 mg/m3. lung cancer Lung cancer pulm fibrosis Pulmonary fibrosis skin irr Skin irritation URT irr Upper Respiratory Tract irritation varies varies			
Immediately Dangerous to Life or Health Concentrations (IDLH)			
Substance name	CAS-No.	Control parameters	Update
Chromium Acetate	1066-30-4	Immediately Dangerous to Life or Health Concentration Value 25 mg/m³	1995-03-01
Crystalline Silica	14808-60-7	Immediately Dangerous to Life or Health Concentration Value 50 mg/m³	1995-03-01
Engineering measures			
Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.			
Personal protective equipment			
Respiratory protection	:	Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Dust safety masks are recommended when the dust concentration is excessive. Air-Purifying Respirator for Dusts and Mists / P100. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.	
Hand protection	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the	
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product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.	
Eye protection	: Eye wash bottle with pure water. Safety glasses.
Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate:. Remove and wash contaminated clothing before re-use. Skin should be washed after contact. Footwear protecting against chemicals.
Hygiene measures	: When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.
SECTION 9: Physical and chemical properties	
Information on basic physical and chemical properties	
Appearance	
Form	: Powder
Physical state	: Solid
Color	: Reddish brown
Odor	: Mild
Odor Threshold	: No data available
Safety data	
Flash point	: Not applicable
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Oxidizing properties	: No
Autoignition temperature	: No data available
Thermal decomposition	: No data available
Molecular formula	: Mixture
Molecular weight	: Not applicable
pH	: Not applicable
Pour point	: No data available
Boiling point/boiling range	: Not applicable
Vapor pressure	: Not applicable
Relative density	: Not applicable
Density	: 1.59 g/cm3
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Water solubility	:	Partly soluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity, kinematic	:	Not applicable
Relative vapor density	:	Not applicable
SECTION 10: Stability and reactivity		
Chemical stability	:	This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Possibility of hazardous reactions		
Hazardous reactions	:	Hazardous reactions: Hazardous polymerization does not occur. Further information: No decomposition if stored and applied as directed.
Conditions to avoid	:	No data available.
Thermal decomposition	:	No data available
Hazardous decomposition products	:	No data available
Other data	:	No decomposition if stored and applied as directed.
SECTION 11: Toxicological information		
Desco® Deflocculant Acute oral toxicity	:	Acute toxicity estimate: 3,310 mg/kg Method: Calculation method
Desco® Deflocculant Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method
Desco® Deflocculant Skin irritation	:	May cause skin irritation and/or dermatitis.
Desco® Deflocculant Eye irritation	:	Irritating to eyes.
Desco® Deflocculant Sensitization	:	Causes sensitization.
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Repeated dose toxicity		
Methyl ester of sulfonated tannin	:	Species: Rat, male Sex: male Application Route: oral gavage Dose: 100, 300, 1000 mg/kg Exposure time: 32 d Number of exposures: Daily NOEL: 1,000 mg/kg Method: OECD Guideline 422 No adverse effects expected
		Species: Rat, female Sex: female Application Route: oral gavage Dose: 100, 300, 1000 mg/kg Exposure time: 39 - 47 d Number of exposures: Daily NOEL: 1,000 mg/kg Method: OECD Guideline 422 No adverse effects expected
Chromium Acetate		Species: Mouse Application Route: oral gavage Dose: 5 ppm Exposure time: lifetime Number of exposures: in drinking water
Genotoxicity in vitro		
Methyl ester of sulfonated tannin	:	Test Type: Chromosome aberration test in vitro Metabolic activation: with and without metabolic activation Method: OECD Guideline 473 Result: negative
Chromium Acetate		Test Type: Sister Chromatid Exchange Assay Result: negative
		Test Type: Chromosome aberration test in vitro Result: positive
Carcinogenicity		
Chromium Acetate	:	Species: Rat Dose: 5 mg/l Exposure time: lifetime Number of exposures: in drinking water Remarks: no increase incidence of tumors
Reproductive toxicity		
Methyl ester of sulfonated tannin	:	Species: Rat Sex: male Application Route: oral gavage Dose: 100, 300, 1000 mg/kg Exposure time: 32 d Number of exposures: Daily Method: OECD Guideline 422
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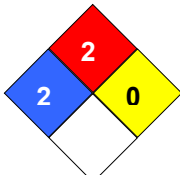
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	<p>NOAEL Parent: 1,000 mg/kg Fertility and developmental toxicity tests did not reveal any effect on reproduction.</p> <p>Species: Rat Sex: female Application Route: oral gavage Dose: 100, 300, 1000 mg/kg Exposure time: 39 - 47 d Number of exposures: Daily Method: OECD Guideline 422 NOAEL Parent: 1,000 mg/kg NOAEL F1: 1,000 mg/kg Fertility and developmental toxicity tests did not reveal any effect on reproduction.</p>	
CMR effects		
Crystalline Silica	: Carcinogenicity: Positive evidence from human epidemiological studies (inhalation)	
Desco® Deflocculant Further information	: No data available.	
SECTION 12: Ecological information		
Toxicity to fish		
Methyl ester of sulfonated tannin	: LL50: > 1,800 mg/l Exposure time: 96 h Species: Scophthalmus maximus (Flatfish, Flounder) Method: OECD Test Guideline 203	
Ferrous Sulfate	: LL50: > 6.25 mg/l Exposure time: 96 h Species: Cyprinodon variegatus (sheepshead minnow) semi-static test Method: OECD Test Guideline 203	
Chromium Acetate	: LC50: > 100 mg/l Exposure time: 96 h Species: Danio rerio (Zebra Fish) semi-static test Method: OECD Test Guideline 203	
Toxicity to daphnia and other aquatic invertebrates		
Methyl ester of sulfonated tannin	: EL50: 73.2 mg/l Exposure time: 48 h Species: Acartia tonsa (Marine Copepod) Method: ISO TC147/SC5/WG2	
Ferrous Sulfate	: LC50: 190 mg/l Exposure time: 48 h Species: Acartia tonsa (Marine Copepod) Method: ISO TC147/SC5/WG2	
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Chromium Acetate	: EC50: > 100 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) semi-static test Method: OECD Test Guideline 202	
Toxicity to algae		
Methyl ester of sulfonated tannin	: ErC50: > 100 mg/l Exposure time: 72 h Species: Desmodesmus subspicatus (green algae) Method: OECD Test Guideline 201	
	: EbC50: 79 mg/l Exposure time: 72 h Species: Desmodesmus subspicatus (green algae) Method: OECD Test Guideline 201	
Ferrous Sulfate	: EL50: 45 mg/l Exposure time: 72 h Species: Skeletonema costatum (Marine Algae) Method: ISO 10253	
Biodegradability	: Taking into consideration the properties of several ingredients, the product is estimated not to be readily biodegradable according to OECD classification.	
Elimination information (persistence and degradability)		
Additional ecological information	: Harmful to aquatic life with long lasting effects.	
Ecotoxicology Assessment		
Short-term (acute) aquatic hazard		
Methyl ester of sulfonated tannin	: Harmful to aquatic life.	
Chromium Acetate	: Harmful to aquatic life.	
Long-term (chronic) aquatic hazard		
Methyl ester of sulfonated tannin	: Harmful to aquatic life with long lasting effects.	
SECTION 13: Disposal considerations		
The information in this SDS pertains only to the product as shipped.		
Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.		
Product	: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.	
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Contaminated packaging	: Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.
SECTION 14: Transport information	
<p>The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).</p> <p>Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.</p> <p>US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION) UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S., (FERROUS SULFATE), 9, III, RQ (FERROUS SULFATE)</p> <p>IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS) NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.</p> <p>IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION) NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.</p> <p>ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE)) NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.</p> <p>RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE)) NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.</p> <p>ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS) NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.</p> <p>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</p>	
SECTION 15: Regulatory information	
National legislation	
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SARA 311/312 Hazards	: Combustible dust Serious eye damage or eye irritation Respiratory or skin sensitization Carcinogenicity
CERCLA Reportable Quantity	: Calculated RQ exceeds reasonably attainable upper limit. Chromium Acetate
SARA 302 Reportable Quantity	: This material does not contain any components with a SARA 302 RQ.
SARA 302 Threshold Planning Quantity	: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 304 Reportable Quantity	: This material does not contain any components with a section 304 EHS RQ.
SARA 313 Components	: The following components are subject to reporting levels established by SARA Title III, Section 313: : Chromium Acetate - 1066-30-4
Clean Air Act	
Ozone-Depletion Potential	: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61): : Chromium Acetate - 1066-30-4	
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).	
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).	
US State Regulations	
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<p>Pennsylvania Right To Know</p> <p>: Ferrous Sulfate - 17375-41-6 Chromium Acetate - 1066-30-4</p> <p>Pennsylvania Right To Know</p> <p>: Sulfomethylated Quebracho - 68201-64-9 Sodium Lignite - 68131-04-4 Ferrous Sulfate - 17375-41-6 Chromium Acetate - 1066-30-4</p> <p>New Jersey Right To Know</p> <p>: Ferrous Sulfate - 17375-41-6 Chromium Acetate - 1066-30-4 Crystalline Silica - 14808-60-7</p> <p>New Jersey Right To Know</p> <p>: Sulfomethylated Quebracho - 68201-64-9 Sodium Lignite - 68131-04-4 Ferrous Sulfate - 17375-41-6 Chromium Acetate - 1066-30-4 Crystalline Silica - 14808-60-7</p> <p>California Prop. 65 Components</p> <p>: WARNING! This product contains a chemical known in the State of California to cause cancer.</p> <p>WARNING! This product contains a chemical known in the State of California to cause cancer. Crystalline Silica 14808-60-7</p> <p>Notification status</p> <p>Europe REACH : Not in compliance with the inventory</p> <p>Switzerland CH INV : On the inventory, or in compliance with the inventory</p> <p>United States of America (USA) : On or in compliance with the active portion of the TSCA inventory</p> <p>Canada DSL : All components of this product are on the Canadian DSL</p> <p>Australia AICS : On the inventory, or in compliance with the inventory</p> <p>New Zealand NZIoC : Not in compliance with the inventory</p> <p>Japan ENCS : Not in compliance with the inventory</p> <p>Korea KECI : A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance.</p> <p>Philippines PICCS : Not in compliance with the inventory</p> <p>China IECSC : On the inventory, or in compliance with the inventory</p> <p>Taiwan TCSI : Not in compliance with the inventory</p>		
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SECTION 16: Other information			
NFPA Classification		: Health Hazard: 2 Fire Hazard: 2 Reactivity Hazard: 0	
			
Further information			
Legacy SDS Number		: 59390	
<p>Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.</p> <p>The information in this SDS pertains only to the product as shipped.</p> <p>The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.</p>			
Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and	TSCA	Toxic Substance Control Act
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	New Chemical Substances		
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

เอกสารข้อมูลความปลอดภัย

ตามระเบียบอีซี 91/55/อีอีซี

MERCK

1. ข้อมูลเกี่ยวกับสารเคมีและบริษัทผู้ผลิตและจัดจำหน่าย

ข้อมูลเกี่ยวกับผลิตภัณฑ์	
หมายเลขผลิตภัณฑ์:	159735
ชื่อผลิตภัณฑ์:	Sodium carbonate (volumetric standard) anhydrous Reag. Ph Eur

ข้อมูลเกี่ยวกับผู้ผลิต/ผู้ส่ง

บริษัท:	บริษัท เมอร์ค จำกัด
	ชั้น 9 อาคาร มอนเทอเรย์ 2170 ถนน เพชรบุรีตัดใหม่ บางกะปิ ห้วยขวาง กรุงเทพฯ 10320
	โทรศัพท์ : (662) 308 - 0218

2. องค์ประกอบ/ข้อมูลเกี่ยวกับส่วนผสม

ชื่ออื่น			
anhydrous soda			
เลขรหัสซีเอส:	497-19-8	เลขดัชนีอีซี:	011-005-00-2
มวลต่อโมล:	105.99	เลขอีไอเอ็นอีซีเอส:	207-838-8
สูตรโมเลกุล:	CNa ₂ O ₃		

3. ข้อมูลเกี่ยวกับอันตราย

ระคายเคืองต่อตา

4. มาตรการปฐมพยาบาล

เมื่อสุดคม: ให้นำอากาศบริสุทธิ์
เมื่อถูกผิวหนัง: ชะล้างออกด้วยน้ำปริมาณมาก ถอดเสื้อผ้าที่เปื้อนออกทันที
เมื่อเข้าตา: ชะออกด้วยน้ำปริมาณมากโดยลืมตากว้าง พบจักษุแพทย์
เมื่อกลืนกิน: ให้ผู้ป่วยดื่มน้ำปริมาณมาก (หลายลิตรถ้าจำเป็น) นำส่งแพทย์

5. มาตรการการผจญเพลิง

สารดับไฟที่เหมาะสม:
เลือกใช้สารดับเพลิงที่เหมาะสมกับวัสดุที่อยู่ในบริเวณใกล้เคียง

ข้อมูลอันตรายอื่น:
ไม่มีข้อมูล

ข้อมูลอื่น:
ไม่ลุกไหม้ติดไฟ

6. มาตรการเมื่อมีการปล่อยสารโดยอุบัติเหตุ

ข้อควรระวังส่วนบุคคล:

ไม่ควรทำให้เกิดฝุ่น ห้ามสูดดมฝุ่น

วิธีทำความสะอาด/ดูดซับ:
กวาดขยะแห้ง ส่งไปกำจัด ทำความสะอาดบริเวณที่ปนเปื้อน

7. การจัดการและการเก็บรักษา

การจัดการ:
ไม่มีข้อบังคับอื่น

การเก็บ:

ปิดให้แน่น เก็บในที่แห้ง บริเวณที่มีการถ่ายเทอากาศได้ดี เก็บในที่เย็น (อุณหภูมิ +2 ถึง +8 องศาเซลเซียส) ข้อมูลเกี่ยวกับอุณหภูมิที่ใช้เก็บรักษา ใช้สำหรับวัตถุทุกชิ้นในหีบห่อ

ข้อบังคับสำหรับ ห้องเก็บสารและถังบรรจุ:
ห้ามใช้ถังบรรจุที่เป็นโลหะน้ำหนักเบา

8. การควบคุมการสัมผัสสาร/ การป้องกันส่วนบุคคล

อุปกรณ์ป้องกันส่วนบุคคล:	
การป้องกันระบบหายใจ:	จำเป็น เมื่อมีฝุ่น
การป้องกันตา:	จำเป็น
การป้องกันมือ:	จำเป็น
ควรสวมใส่ชุดป้องกันที่เหมาะสมกับบริเวณทำงาน โดยพิจารณาจากความเข้มข้นและปริมาณสารอันตรายที่ใช้ ควรมีการตรวจสอบความทนทานต่อสารเคมีของชุดป้องกันโดยตัวแทนจำหน่าย	
ข้อควรปฏิบัติ	เปลี่ยนเสื้อผ้าที่เปื้อนสารเคมี ให้ทาครีมป้องกันผิวหนัง ล้างมือหลังจากการใช้สาร

9. สมบัติทางเคมีและกายภาพ

ลักษณะ:	ของแข็ง		
สี:	ขาว		
กลิ่น:	ไม่มีกลิ่น		
ค่าพีเอช 50 g/l น้ำ	(25 ฐC)	11.5	
จุดหลอมเหลว		~ 891 ฐC	
จุดเดือด		ไม่มีข้อมูล	
อุณหภูมิติดไฟ		ไม่มีข้อมูล	
จุดวาบไฟ		ไม่มีข้อมูล	
ขอบเขตการระเบิด	ล่างบน	ไม่มีข้อมูล	
ความหนาแน่น	(20 ฐC)	~ 2.53 g/cm ³	
ความสามารถในการละลาย	น้ำ (20 ฐC)	~ 210 g/l	

10. ความเสถียรและความว่องไวต่อปฏิกิริยา

สภาวะที่ต้องหลีกเลี่ยง
ไม่มีข้อมูล

สารที่ด้องหลักเลียง

อะลูมิเนียม , โลหะอัลคาไลน์เอิร์ธ ในสภาพที่เป็นผง , สารอินทรีย์จำพวกไนโตร , ฟลูออรีน , โลหะอัลคาไล , ออกไซด์ของโลหะ / ความร้อน , กรดซัลฟิวริกเข้มข้น

ผลิตภัณฑ์จากการสลายตัวที่เป็นอันตราย

ไม่มีข้อมูล

11. ข้อมูลทางพิษวิทยา

พิษเฉียบพลัน

LD₅₀ (oral, rat): 4090 mg/kg ;
LC₅₀ (inhalation, rat): 2300 mg/m³ /2 h ;

ข้อมูลเพิ่มเติมทางพิษวิทยา

สมบัติของสาร: ระคายเคืองอย่างรุนแรง
เมื่อสูดดมฝุ่น: ระคายเคืองต่อระบบทางเดินหายใจ
เมื่อสัมผัสกับสาร: ก่อให้เกิดการระคายเคืองอย่างรุนแรงต่อ ตา , ผิวหนัง , เยื่อเมือก
เมื่อกลืนกิน: ระคายเคืองต่อเยื่อในปาก หลอดลม หลอดอาหารและระบบลำไส้

12. ข้อมูลเชิงนิเวศน์

ผลกระทบต่อระบบนิเวศน์:
ไม่มีข้อมูลที่เป็นตัวเลข เกี่ยวกับผลกระทบต่อระบบนิเวศน์ของผลิตภัณฑ์นี้

ผลกระทบต่อทางชีวภาพ:
เป็นพิษต่อ สิ่งมีชีวิตที่อาศัยในน้ำ ส่งผลที่เป็นอันตรายเนื่องจากการเปลี่ยนแปลงพีเอช

ข้อมูลอื่นๆเกี่ยวกับระบบนิเวศน์:
ไม่ก่อให้เกิดผลกระทบต่อระบบนิเวศน์ หากมีการใช้และจัดการกับผลิตภัณฑ์อย่างเหมาะสม

13. มาตรการการกำจัด

ผลิตภัณฑ์:

ไม่มีกฎข้อบังคับของอิชีว่าด้วยการกำจัดสารเคมีหรือกากเคมีซึ่งมักจะถือว่าเป็นของเสียเฉพาะ ประเทศสมาชิกอิชีมีกฎหมายและข้อบังคับในการกำจัดของเสียเฉพาะเหล่านั้น โปรดติดต่อผู้รับผิดชอบหรือบริษัทรับกำจัดของเสียที่ได้รับอนุญาตเพื่อปรึกษารูติกำจัด

บรรจุภัณฑ์:

กำจัดตามระเบียบราชการ ห้ามพื่อที่ปนเปื้อนสารเคมีให้จัดการเช่นเดียวกับตัวสารเคมี สำหรับห้ามพื่อที่ไม่ปนเปื้อนให้กำจัดเหมือนของเสียตามบ้านหรือนำมาใช้ใหม่ หากไม่มีข้อกำหนดอื่นเป็นพิเศษ ติดต่อบริษัทผู้ผลิตตามที่ระบุในฉลาก

14. ข้อมูลการขนส่ง

ไม่มีข้อกำหนดเกี่ยวกับการขนส่ง

15. ข้อมูลเกี่ยวกับข้อกำหนด

การติดฉลากตามระเบียบอิชี

สัญลักษณ์:	Xi	กักร่อน
ข้อมูลเกี่ยวกับอันตราย:	R 36	ระคายเคืองต่อตา
ข้อมูลเกี่ยวกับความปลอดภัย:	S 22-26	ห้ามสูดดมฝุ่น เมื่อเข้าตา ล้างทันทีด้วยน้ำปริมาณมาก, พบแพทย์
เลขอิชี:	011-005-00-2	EC label

ระเบียบของเยอรมัน

ระดับมลพิษต่อแหล่งน้ำ 1 (สารก่อมลพิษ ระดับต่ำ)

16. ข้อมูลอื่น

ปรึบลดรายละเอียตบนฉลากของถังบรรจุ เมื่อมีปริมาณน้อย

การเปลี่ยนแปลงจากเอกสารฉบับก่อน

เพิ่มเติมข้อมูลทั่วไป

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ลิขสิทธิ์คำแปลภาษาไทย โดยจุฬาลงกรณ์มหาวิทยาลัย และกรมโรงงานอุตสาหกรรม

SICHUAN OIL & GAS ENGINEERING COMPANY OF SPA

MATERIAL SAFETY DATA SHEET

Revision Data: 23/09/2003

1. CHEMICAL PRODUCT AND COMPAN INFORMATION

Product Name: SULFONATED ASPHALT

Synonyms: FT-1 sulfoasphalte

Chemical Family: Drilling Fluid Additive

Application: Fluid Loss Additive

Manufacturer/Supplier

Chemical Plant of Zhengzhou Yuhua Co.,Ltd./ Sichuan Oil & Gas Engineering Company of SPA

Telephone: 028-86011965

Emergency Telephone: 028-86011965

Prepared By

Telephone: 028-83330871

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Substance</u>	<u>Weight Percent%</u>	<u>ACGIH TLV-TWA</u>	<u>OSHA PEL-TWA</u>
Sulfonated Asphalt	60-90%		
Aids	20-40%		
Moisture	5-10%		

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION! – CERTAIN HEALTH HAZARD

May cause eyes , skin and respiratory irritation.

DANGER! - CHRONIC HEALTH HAZARD: Not determined

Wear glasses when use the product.

4. FIRST AID MEASURES

Skin

Wash with soap and water. Get medical attention if irritation persists.

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15minutes and get medical attention if irritation persists.

Ingestion

Drink water, not put any thing in someone's mouth whom is unconscious. Get medical attention if irritation persists.

Notes to Physician

Treat symptomatically

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Not Determined

Flash Point/Range (C): Not Determined

Flash Point Method: Not Determined

Autoignition Temperature (F): Not Determined

Autoignition Temperature (C): Not Determined

Flammability Limits in Air – Lower (%): Not Determined

Flammability Limits in Air – Upper (%): Not Determined

Fire Extinguishing Media

All standard firefighting media.

Special Exposure Hazards

Not applicable

Special Protective Equipment for Fire-Fighters

Not applicable

NFPA Ratings: Health: 0 Flammability: 0 Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures

Use appropriate protective equipment. Avoid contact skin and irritating eyes.

Environment Precautionary Measures

Collect using dustless method and hold for appropriate disposal. Use appropriate methods for dealing with the waste.

7. HANDLING AND STORAGE

Handling Precautions

Use good housekeeping in storage and work areas to prevent moisture. And avoid sunshine, heat and wet when transporting it.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use approved industrial ventilation and local exhaust as required to maintain exposure below applicable exposure limits.

Hand Protection

Normal work gloves.

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing..

Eyes Protection

Wear safety glasses or goggles to protect against exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Small gain
Color:	black and brown
Odor:	Asphalt smell
PH:	8-11
Specific Gravity @ 20C (Water=1):	1.30-1.40
Density @ 20C (lbs./gallon):	10.80-11.70
Bulk Density @ 20C (lbs./ft ³):	Not Determined
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20C(mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Small
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	≥50
Solubility in Solvents (g/100ml):	(CH ₃) ₂ SO ₃ (DMS) in DMSO ≥30
Solubility in Sea Water (g/100ml):	Insoluble
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20C (centipoises):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partitition Coefficient/n-Octanol/Water:	Not Determined

Molecular Weight (g/mole): Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	No polymerization in normal temperature
Conditions to Avoid	Long exposure in high temperature
Incompatibility (Material to Avoid):	Not determined
Hazardous Decomposition Products:	CO ₂ after burning
Additional Guidelines:	Not determined

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure

Eyes of skin contact, inhalation.

Skin Contact

May cause mechanical skin irritation.

Eye Contact

May cause eye irritation.

Ingestion

None known. .

Aggravated Medical Conditions

Not determined.

Chronic Effects/Carcinogenicity

Not determined.

Toxicity Tests

Oral Toxicity:	Not Determined
Skin Toxicity:	Not Determined
Primary Irritation Effect:	Not Determined
Carcinogenicity:	Not Determined
Genotoxicity:	Not Determined
Reproductive/Developmental Toxicity:	Not Determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air):	Not determined
Persistence/Degradability:	Degrade

Bio-accumulation:	Not determined
Ecotoxicological Information	
Prawn Toxicity Test:	EC ₅₀ /96h test6666ppm low toxicity
Acute Crustaceans Toxicity:	Low toxicity
Acute Algae Toxicity:	Low toxicity
Chemical Fate Information:	Not determined
Other Information:	None application

13. DISPOSAL CONSIDERATIONS

Disposal Method

Bury in a licensed landfill according to national and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

Transportation Department

Not restricted

Air Transportation

ICAO/IATA

Not restricted

Other Shipping Information

Lables: None

15. REGULATORY INFORMATION

PRC Regulation

PRC TSCA Inventory

All components listed on inventory.

16. OTHER INFORMATION

Additional Information

For additional information on the use of this product, please contact with Sichuan Oil & Gas Engineering Company of SPA representatives.

For questions about the Material Safety Data Sheet for this or other Sichuan Oil & Gas Engineering Company of SPA products, please contact Product Service Department at 028-86011965.

Disclaimer Statement

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SICHUAN OIL & GAS ENGINEERING COMPANY, SPA

MATERIAL SAFETY DATA SHEET

AQUAGEL®GOLD SEAL

Revision Date: 09/23/2003

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Polymer filtrate loss reduction additive
Synonyms: NH₄PAN Hydrolyzation Polyacrylonitrile Ammonium Salt
Chemical Family: Oil well drilling fluid additive
Application: Filtrate loss reduction additive

Manufacturer/Supplier:

Chemical Factory of Zhengzhou Yuhua Corp. Ltd./ Sichuan Oil & Gas Engineering Company, SPA

Tel.: 028-86011965

Emergency Tel.: 028-86011965

Prepared By

Tel.: 028-83330871

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance	Weight Percent (%)	ACGIH TLV-TWA	OSHA PEL-TWA
Macromolecule polymer	85-95		
Water	0-10		
Alkali	1-5		

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION! - ACUTE HEALTH HAZARD

May cause eye and respiratory irritation.

DANGER! – CHRONIC HEALTH HAZARD: Undetermined

This product is gray grain solid, which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Wear labor insurance products to avoid stimulate

eyes and skin before using the product.

4. FIRST AID MEASURES

Skin

Wash with soap and water. Get medical attention if irritation persists.

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion

Drink water for dilute, don't put anything in his mouth. Under normal conditions, first aid procedures are not required.

Notes to Physician

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): >300

Flash Point/Range (C): >150

Flash Point Method: Not applicable

Autoignition Temperature (F): >300

Autoignition Temperature (C): >150

Flammability Limits in Air-Lower (%): Not applicable

Flammability Limits in Air-Upper (%): Not applicable

Fire Extinguishing Media

All standard firefighting media

Special Exposure Hazards

Not applicable

Special Protective Equipment for Fire-fighters

Not applicable

NFPA Ratings: Health 0, Flammability 0, Reactivity 0

HMIS Ratings: Flammability 0, Reactivity 0, Health 0

6. ACCIDENTAL RELEASE MEASURES

Personal precautionary Measures

Use appropriate protective equipment. Avoid stimulating eyes and skin.

Environmental precautionary Measures

Collect using dustless method and hold for appropriate disposal. Use appropriate methods for collection, storage and disposal.

7. HANDLING AND STORAGE

Handling precautions

This product should storage in the airiness, shady, cool and dryness storage house. Use only with adequate ventilation to keep exposure below recommended exposure limits. Use covering during transportation, avoid exposure under the sun, avoid heat and wet, avoid break of the package.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Control

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

Respiratory Protection

Wear breathing equipment, respiration/mask while the chroma is above the limit.

Hand Protection

Normal work gloves and etc.

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	: Solid
Color	: White or Grey
Odor	: A bit of ammoniacal odour
PH	: 8-10
Specific Gravity @ 20 C (Water = 1)	: 1.10-1.30
Density @ 20 C (lbs/gallon)	: 9.2-10.8
Bulk Density @ 20 C (lbs/ft3)	: Not Determined
Boiling Point/Range (F)	: Not Determined
Boiling Point/Range (C)	: Not Determined
Freezing Point/Range (F)	: Not Determined
Freezing Point/Range (C)	: Not Determined
Vapor Pressure @ 20 C (mmHg)	: Not Determined
Vapor Density (Air =1)	: Not Determined
Percent Volatiles	: Bit
Evaporation Rate (Butyl Acetate =1)	: Not Determined

Solubility in Water (g/100ml)	: 0.1-10.0
Solubility in Solvents (g/100ml)	: ≥ 5.0
Solubility in Sea Water (g/100ml)	: Not Determined
VOCs (lbs./gallon)	: Not Determined
Viscosity, Dynamic @ 20 C (centipoises)	: Not Determined
Viscosity, Kinematic @ 20 C (centipoises)	: Not Determined
Partition Coefficient/n-Octanol/Water	: Not Determined
Molecular Weight (g/mole)	: Not Determined

10. STABILITY AND REACTIVITY

Stability Date:	Not determined
Hazardous Polymerization:	Not determined
Condition to Avoid:	Not determined
Incompatibility (Material to Avoid):	Not determined
Hazardous Decomposition Products:	Produce CO ₂ while burning
Addition Guidelines:	Not determined

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure:	Eye or skin contact, inhalation
Skin Contact:	May cause mechanical skin irritation
Eye Contact:	May cause eye irritation
Ingestion:	Not determined
Aggravated Medical Conditions:	Not determined
Chronic Effects/Carcinogenicity:	Not determined
Other information:	Not determined
Toxicity Tests:	
Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Primary Irritation Toxicity:	Not determined
Carcinogenicity:	Not determined
Genotoxicity:	Not determined
Reproductive/Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air):	Not Determined
Persistence/Degradability:	BOD ₅ /COD _{cr} =15
Bio-accumulation:	Not determined
Ecotoxicological information:	
Toxicity Test:	EC ₅₀ /96h Test 10000 ppm low toxicity

Acute Crustaceans Toxicity: Low toxicity
Acute Algae Toxicity: Low toxicity
Chemical Fate Information: Not determined
Other Information: Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method

Bury in a licensed landfill according to Chinese government, state, and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

Transportation Dep. Not restricted

Air Transportation

ICAO/IATA Not restricted

Other Shipping Information

Lables: None

15. REGULATORY INFORMATION

Chinese Regulations

Chinese Venomousness Material Management Regulation/Law

All catalogs

16. OTHER INFORMATION

Not applicable

Additional Information

For additional information on the use of this product, contact your local SOGEC, SPA representative.

For question about the Material Safety Data Sheet for this or other products, contact Sichuan Oil & Gas Engineering Company, SPA Product Stewardship at 028-86011965.

Disclaimer Statement

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Sichuan Oil & Gas Engineering Company of SPA

Material Safety Data Sheet

Revision Date:09/23/2003

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: LUBRICANT

Synonyms: RH₃ lubricant

Chemical Family: oil-well drilling fluid additive

Application: Lubricant preventing collapse

Manufacturer/supplier:

Golden Coast Chemical Material Plant of Beijing oil Science Institute

Sichuan Oil & Gas Engineering Company of SPA

Telephone: 028-86011965

Emergence Telephone:028-86011965

Prepare By:

Telephone: 028-8330871

2. COMPOSITION/INFORMATION ON INGREDIENT

<u>Substance</u>	<u>Weight Percent (%)</u>	<u>ACGIH TLV-TWA</u>	<u>OSHA PEL-TWA</u>
Mineral Oil	40-60		
Emulsifying Agent	1-10		
Special Surface Active Agent	20-40		

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION! CERTAIN HEALTH HAZARD

May cause eye and respiratory irritation.

DANGER! CHRONIC HEALTH HAZARD; TO EXCITE SKIN FOR LONG CONTRACT

Wearing working clothing when using this product. Avoid irritating eyes and contacting skin.

4. FIRST AID MEASURES

Skin

Wash with soap and water. Get medical attention if irritation persists

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion

Diluted by drinking, never let the person who is unconscious eat anything and get medical attention if irritation persists.

Notes to Physician

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	>167
Autoignition Temperature (C):	>75
Flammability Limits in Air-lower (%):	Not Determined
Flammability Limits in Air-upper (%):	Not Determined

Fire Extinguishing Media:

Powder fire extinguisher and other standard extinguisher

Special Exposure Hazards

Keep away from high temperature and fire

Special Protective Equipment for Fire-Fighters

None

NFPA Ratings: Health 0, Flammability: flammable, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures:

Using appropriate equipment. Avoid irritating eyes and contacting skin.

Environment precautionary Measures:

Forbidden throwing away and polluting environment. Store and transport appropriately, use

correctly

7. HANDLING AND STORAGE

This product is thick liquid, which may not become airborne. Notice install and handling gently, keep from wet when handling. Don't install, transport and store with explosives. Use only with adequate ventilation to keep exposure below recommended exposure limits.

8.EXPOSURE CONTROLS/ PERSONAL PROTECTION

Engineering controls:

Use appropriate industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

Hand Protection

Normal work gloves

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures when removing or laundering clothing.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Fluid
Color:	black
Odor:	odorless or mineral oil odor
PH:	7-9
Specific Gravity @ 20 C (Water=1):	0.95-1.05
Density @ 20 C (lbs./gallon):	7.9-8.8
Bulk Density @ 20 C (lbs./ft3):	Not Determined
Boiling Point/Range (F):	390-410
Boiling Point/Range (C):	200-210
Freezing Point/Range (F):	<-30°
Freezing Point/Range (C):	<-10°
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Slight volatile
Evaporation Rate (Butyl Acetate=1):	< 2
Solubility in Water (g/100ml):	emulsification

Solubility in Solvents (g/100ml):	Not Determined
Solubility in Sea Water (g/100ml):	emulsification
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20C (centipoise):	3-10mpa.s
Viscosity, Kinematic @ 20 C (centistrokes):	2.2-29mm ² /s
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Complex, not determined

10. STABILITY AND REACTIVITY

Stability Data:	Not decompose in 200°
Hazardous Polymerization:	No polymerization in 200°
Conditions to Avoid:	Long time high temperature
Incompatibility (Materials to Avoid):	Not determined
Hazardous Decomposition Products:	burning and releasing CO ₂
Additional Guidelines:	Not determined

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure

Eye or skin contact, inhalation.

Skin Contact

May cause skin irritation.

Eye Contact

May cause eye irritation.

Ingestion	Not known.
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Aggravated Medical Conditions	Not known
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Chronic Effects/Carcinogenicity	Not Known.
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Other Information	Not Known
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Toxicity Tests

Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity:	Not determined

Genotoxicity:	Not determined
Reproductive/Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Waste/Soil/Air)	Not determined
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Persistence/Degradability	Not determined
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Bio-accumulation	Not determined
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Ecotoxicological Information

Toxicity test:	EC ₅₀ /96h test, > 10 ⁵ ppm, innocuity
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Acute Crustaceans Toxicity:	Low
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Acute Algae Toxicity:	Low
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Chemical Fate Information:	Not determined
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Other Information:	Not applicable
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13. DISPOSAL CONSIDERATIONS

Disposal Method

Bury in a licensed landfill or set on fire with high temperature according to Chinese government and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

Not restricted

Air Transportation

ICAO/IATA

Not restricted

Other Shipping Information

Labels:	None
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15. REGULATORY INFORMATION

PRC Regulations

Chinese Toxic Substance Control Act Inventory

All components listed on inventory.

16. OTHER INFORMATION

Not applicable.

Additional Information

For additional information on the use of this product, contact your local SOGEC representative.

For questions about the Material Safety Data Sheet for this or other SOGEC products, contact Product Stewardship at 028-86011965.

Disclaimer Statement

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SICHUAN OIL & GAS ENGINEERING COMPANY, SPA

MATERIAL SAFETY DATA SHEET

AQUAGEL®GOLD SEAL

Revision Date: 09/23/2003

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Cleanser
Synonyms: RH₄ detergent
Chemical Family: Oil well drilling fluid additive
Application: Cleanser, Antiballing agent

Manufacturer/Supplier:

Beijing Youke Institute Golden Beach Factory/ Sichuan Oil & Gas Engineering Company, SPA
Tel.: 028-86011965
Emergency Tel.: 028-86011965

Prepared By

Tel.: 028-83330871

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substance	Weight Percent (%)	ACGIH TLV-TWA	OSHA PEL-TWA
Surfactant	>80		
Water	1-20		

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION! - ACUTE HEALTH HAZARD

May cause eye and respiratory irritation.

DANGER! – CHRONIC HEALTH HAZARD: Don't take into the body and have a bad effect

Wear labor insurance products to avoid stimulate eyes and skin before using the product.

4. FIRST AID MEASURES

Skin

Wash with soap and water. Get medical attention if irritation persists.

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion

Drink water for dilute, don't put anything in his mouth. Under normal conditions, first aid procedures are not required.

Notes to Physician

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): >392
Flash Point/Range (C): >200
Flash Point Method: Not Determined
Autoignition Temperature (F): >208 Volatilization
Autoignition Temperature (C): >100 Volatilization
Flammability Limits in Air-Lower (%): Not Determined
Flammability Limits in Air-Upper (%): Not Determined

Fire Extinguishing Media

All standard firefighting media

Special Exposure Hazards

Not applicable

Special Protective Equipment for Fire-fighters

Not applicable

NFPA Ratings: Health 0, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal precautionary Measures

Use appropriate protective equipment. Avoid inhale dust.

Environmental precautionary Measures

Collect using dustless method and hold for appropriate disposal. Use appropriate methods for collection, storage and disposal.

7. HANDLING AND STORAGE

Handling Precautions

This product should storage in the airiness, shady, cool and dryness storage house. Use only with adequate ventilation to keep exposure below recommended exposure limits. Use covering during

transportation, avoid exposure under the sun, avoid heat and wet, avoid break of the package.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Engineering Control

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

Hand Protection

Normal work gloves and etc.

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	: Liquid
Color	: Light yellow or light brown
Odor	: Odorless
PH	: 7-8
Specific Gravity @ 20 C (Water = 1)	: 0.9-1.0
Density @ 20 C (lbs/gallon)	: 7.5-8.3
Bulk Density @ 20 C (lbs/ft3)	: Not Determined
Boiling Point/Range (F)	: 230-250
Boiling Point/Range (C)	: 110-120
Freezing Point/Range (F)	: <10
Freezing Point/Range (C)	: <-12
Vapor Pressure @ 20 C (mmHg)	: Not Determined
Vapor Density (Air =1)	: Close to 1
Percent Volatiles	: Seldom
Evaporation Rate (Butyl Acetate =1)	: Not Determined
Solubility in Water (g/100ml)	: Unlimited
Solubility in Solvents (g/100ml)	: Not Determined
Solubility in Sea Water (g/100ml)	: Unlimited
VOCs (lbs./gallon)	: Not Determined
Viscosity, Dynamic @ 20 C (centipoises)	: 10-30 mpa.s
Viscosity, Kinematic @ 20 C (centipoises)	: Not Determined
Partition Coefficient/n-Octanol/Water	: Not Determined
Molecular Weight (g/mole)	: Not Determined

10. STABILITY AND REACTIVITY

Stability Date:	Stable under normal temperature
Hazardous Polymerization:	None
Condition to Avoid:	Not determined
Incompatibility (Material to Avoid):	Not determined
Hazardous Decomposition Products:	Not determined
Addition Guidelines:	Not determined

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure:	Eye , skin and breathing contact, inhalation
Skin Contact:	May cause mechanical skin irritation, dermatitis
Eye Contact:	May cause eye irritation
Ingestion:	Not determined
Aggravated Medical Conditions:	Not determined
Chronic Effects/Carcinogenicity:	Not determined
Other information:	Not determined
Toxicity Tests:	
Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Primary Irritation Toxicity:	Not determined
Carcinogenicity:	Not tested
Genotoxicity:	Not determined
Reproductive/Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air):	Not Determined
Persistence/Degradability:	Durative/Easy to degradable
Bio-accumulation:	Not determined
Ecotoxicological information:	
Toxicity Test:	EC ₅₀ /96h Test 20000 ppm no toxicity
Acute Crustaceans Toxicity:	No Toxicity
Acute Algae Toxicity:	No Toxicity
Chemical Fate Information:	Not determined
Other Information:	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method

Bury in a licensed landfill according to Chinese government, state, and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

Transportation Dep. Not restricted

Air Transportation

ICAO/IATA Not restricted

Other Shipping Information

Lables: None

15. REGULATORY INFORMATION

Chinese Regulations

Chinese Venomousness Material Management Regulation/Law

All catalogs

16. OTHER INFORMATION

Not applicable

Additional Information

For additional information on the use of this product, contact your local SOGEC, SPA representative.

For question about the Material Safety Data Sheet for this or other products, contact Sichuan Oil & Gas Engineering Company, SPA Product Stewardship at 028-86011965.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

SICHUAN OIL & GAS ENGINEERING COMPANY OF SPA

MATERIAL SAFETY DATA SHEET

Revision Date: 09/23/2003

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Deformer Agent
Synonyms: CT5-3 Deformer Agent
Chemical Family: Drilling Fluid Additive
Application: Mud Deformer Agent

Manufacturer/Supplier

Luzhou Tianquan Chemical Science & Technology Development Co. Ltd.
Sichuan Oil & Gas Engineering Company of SPA

Telephone: 028-86011965

Emergency Telephone: 028-86011965

Prepared By

Telephone: 028-83330871

2. COMPOSITION /INFORMATION ON INGREDIENTS

<u>Substance</u>	<u>Weight Percent(%)</u>	<u>ACGIH TLV-TWA</u>	<u>OSHA PEL-TWA</u>
Organosilicon	40-80		
Emulsifier	10-20		
Moisture Content	20-50		

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION! – HAVE SOME HEALTH HAZARD

Dust may cause eye and skin irritation.

DANGER! – CHRONIC HEALTH HAZARD

Not Determined

Wear labor protection appliances to avoid eye, skin irritation & breathing into lung.

4. FIRST AID MEASURES

Skin

Wash with soap and water. Get medical attention if irritation persists.

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion

Drink water to dilute. Never put anything into the mouth of someone losing consciousness. Get medical attention if irritation persists.

Notes to Physician

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F)	>392
Flash Point/Range(C)	>200
Flash Point Method	Not Determined
Autoignition Temperature(F)	Not Determined
Autoignition Temperature(C)	Not Determined
Flammability Limits in Air – Lower(%)	Not Determined
Flammability Limits in Air – Upper(%)	Not Determined

Fire Extinguishing Media

All standard firefighting media

Special Exposure Hazards

Cannot be uncover in the sun for the long time.

Special Protective Equipment for Fire-Fighters

Not applicable

NFPA Ratings:

Health 0, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures

Use appropriate protective equipment to prevent skin and eye irritation.

Environmental Precautionary Measures

Collect, store and use the product with appropriate measures to avoid pollution, such as spilling into field.

7. HANDLING AND STORAGE

Handling Precautions

The product should be stored in cool and dry storehouse, while adequate ventilation is not necessary because it is thick liquid. Avoid leaking during handling. Don't contact with acid, alkali or water. Use only under recommended exposure limits.

8. EXPOSURE CONTRLS/PERSONAL PROTECTION

Engineering Controls

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

Hand Protection

Wear labor protection appliances.

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be removed right after operation and laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Dove Color
Odor:	Odorless
PH:	7-9
Specific Gravity @ 20 C (Water=1):	1.10-1.30
Density @ 20 C (lbs./gallon):	9.2-10.8
Bulk Density @ 20 C (lbs./ft3):	Not Determined
Boiling Point/Range (F):	275
Boiling Point/Range (C):	135°C
Freezing Point/Range (F):	<14
Freezing Point/Range (C):	<-10

Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Turbidly Soluble
Solubility in Solvents (g/100ml):	Not Determined
Solubility in Sea Water (g/100ml):	Turbidly Soluble
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20C (centipoise):	15-30 centipoise
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	None
Conditions to Avoid:	Not Determined
Incompatibility (Materials to Avoid):	Not Determined
Hazardous Decomposition Products:	Not Determined
Additional Guidelines:	Not Determined

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure

Eye or skin contact, inhalation.

Skin Contact

May cause mechanical skin irritation.

Eye Contact

May cause eye irritation.

Ingestion

None known.

Aggravated Medical Conditions

Not known.

Chronic Effects/Carcinogenicity

None Known.

Other Information

None Known

Toxicity Tests

Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity:	Not determined
Genotoxicity:	Not determined
Reproductive/Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION**Mobility (Waste/Soil/Air)**

Not determined

Persistence/Degradability

Not determined

Bio-accumulation

Not determined

Ecotoxicological Information

Toxicity test:	Low mammalian toxicity
Acute Crustaceans Toxicity:	Low toxicity
Acute Algae Toxicity:	Low toxicity

Chemical Fate Information:	Not determined
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Other Information:	Not applicable
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13. DISPOSAL CONSIDERATIONS**Disposal Method**

Bury in a licensed landfill or burn in the incineration site according to Chinese government and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION**Land Transportation**

DOT

Not restricted

Air Transportation

ICAO/IATA

Restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION**PRC Regulations**

Chinese Toxic Substance Control Act Inventory

All components listed on inventory.

16. OTHER INFORMATION

Not applicable.

Additional Information

For additional information on the use of this product, contact your local SOGEC representative.

For questions about the Material Safety Data Sheet for this or other SOGEC products, contact Product Stewardship at 028-86011965.

Disclaimer Statement

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Material Safety Data Sheet

Product Name: : Quick penetrating agent T

Applicant: : Henan Ocean Chemical Technology Co.,Ltd.

Address: : Zhaigou Village,ChengguanTown,XinmiCity,Henan Province



Signed by Shanghai ICTS Group

Written by: Monica Fan

Date: 4th December 2019

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Material Safety Data Sheet (MSDS)

Part 1 –Identification of the substance and of the company/undertaking

Identification on the label
/Trade name: Quick penetrating agent T
Common name: /
Product uses: /
Supplier(Manufacturer): Henan Ocean Chemical Technology Co.,Ltd.
Address: Zhaigou Village,ChengguanTown,XinmiCity,Henan Province
Code: 452370
Contact Person: Zheng shukun
Telephone: 0371-63125777
Fax: 0371-63125777
Emergency contact:
Contact Person: Zheng shukun
Telephone: 0371-63125777
Mobile phone: +86 18135698989
Fax: 0371-63125777
Email: henanhaiyang168@163.com

Part 2 –Hazards Identification

Classification of the substance or mixture:
GHS label elements:
 Skin corrosion / irritation: Classification 2
 Severe eye injury / eye irritation: Classification 2
 Reproductive toxicity: Classification 2
 Acute toxicity to water environment: Classification 3
 Slow toxicity to water environment: Classification 3

Hazard Pictograms:



Signal Word(S): Warning.
Physicochemical hazards: According to the current information, there is no physicochemical hazard.
Health hazard: According to the current information, there is no health hazard.
Acute toxicity (oral): No classification.
Acute toxicity (transdermal): No classification.
Acute toxicity (inhalation: gas): No classification.
Acute toxicity (inhalation): No classification.

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vapour):

Acute toxicity (inhalation: dust and spray):	No classification.
Skin corrosion/irritation:	Classification 2, Cause skin irritation.
Severe eye injury/eye irritation:	Classification 2, Cause serious eye irritation.
Respiratory hypersensitivity:	No classification.
Skin sensibility:	No classification.
Germ cell mutagenicity:	No classification.
Carcinogenicity:	No classification.
Reproductive toxicity:	Classification 2, Suspected impairment of fertility or fetus.
Heterologous target organ toxicity - single exposure:	No classification.
Heterologous target organ toxicity - repeated exposure:	No classification.
Aspiration hazard:	No classification.
Environmental hazards:	
Acute toxicity to water environment:	Classification 3, Harmful to aquatic organisms.
Slow toxicity to water environment:	Classification 3, Harmful to aquatic organisms with long-term and sustained effects.
Precautions:	
Precautions:	P201: obtain the instruction manual before use. P202: do not deal with it until you understand all safety precautions. P260: do not breathe in dust / smoke / fog / steam / spray. P263: avoid contact during pregnancy / lactation. P264: clean after use. P270: do not eat or smoke when using this product. P273: avoid discharging to the environment. P280: wear protective gloves / protective clothing / protective glasses / protective mask. P281: use the specified personal protective equipment.
Accident response:	P302 + p352: attached to skin: wash with plenty of water and soap. P305 + P351 + P338: when entering eyes: wash carefully with water for several minutes. Next, wearing contact lenses, it's easy to take them off when you take them off. After that, continue cleaning. P308 + P313: if you are worried about exposure or exposure: get a doctor's diagnosis / treatment.

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	P321: special handling is required (refer to label).
	P332 + P313: in case of skin irritation: receive doctor's diagnosis / treatment.
	P337 + P313: under the condition of continuous eye stimulation: receive the diagnosis / treatment of the doctor.
	P362: take off the contaminated clothes and wash them when you use them again.
Secure storage:	P405: lock and keep.
Waste disposal:	P501 This product and container shall be disposed in accordance with local, regional, national and international regulations.

Part 3 - Composition/information on ingredients

Substance/Mixture:	Mixture		
	Chemical Name	CAS No.	Content %
	Sodium alkylsulfonate	577-11-7	95%
	Other	-	5%

Part 4 -First aid measures

In case of skin contact:	Wash with soap and plenty of water. If symptoms appear, seek medical treatment immediately.
In case of eyes contact:	If in eyes: Rinse carefully with water for a few minutes, remove contact lenses, and continue to rinse if available and easy to do.
In case of ingestion:	Rinse your mouth with water and drink plenty of water. If symptoms appear, seek medical treatment.
Most important acute and delayed symptoms and effects:	Cause eye burns.
Signs requiring immediate medical attention and special treatment:	Symptomatic treatment.
After the above measures, contact the doctor and receive the doctor's treatment as needed.	

Part 5 - Fire-Fighting measures

Suitable fire extinguishers:	Water spray, carbon dioxide (CO2), dry chemicals, and chemical foam.
Special hazards caused by chemicals:	Thermal decomposition causes the release of irritating gases and vapors.
Special protective equipment for firefighters:	Firefighters should wear appropriate protective equipment and self-contained breathing apparatus, and a full set of protective clothing if necessary.

Part 6 -Accidental release measures.

Personal protective measures, protective equipment, emergency	Ensure adequate ventilation. Avoid contact with skin, eyes and clothing.
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measures:

Environmental Precautions:	Do not allow product to enter the drain. If safe, prevent further leakage.
Containment, removal methods and disposal materials used for leaking chemicals:	Clean up. Transfer to a properly labeled container for processing. Thoroughly clean the spill area with plenty of water. Do not let the product into the sewer.
Refer to other sections:	For information on safe operation, refer to section 7. For information on personal protective equipment, see Section 8. See section 13 for disposal information.

Part 7 - Handling and storage

Handling:	Avoid contact with eyes and skin. Ensure that the work area has sufficient exhaust ventilation.
Storage:	Place in a cool, dry and well ventilated place. Keep container tightly closed.

Part 8 - Exposure control/personal protection

Occupational exposure limits:	No information.
Engineering measures:	Make sure the working area is well ventilated. Provide safety shower and eye wash.
Individual protection measures, such as personal protective equipment:	
Skin & body protection:	Wear protective clothing.
Eye protection:	Safety glasses with side shields (EU standard-EN166).
Hand protection:	Chemical resistant gloves (Natural rubber).
Hygienic protection:	Wash hands after use.

Part 9 - Physical and chemical properties

Appearance :	Viscous liquid.
Colour:	Colorless to yellow.
Odor:	Strong smell.
Odor threshold:	Not applicable.
Molecular weight:	444.
Molecular formula:	$C_{20}H_{17}O_7SNa$.
Molar mass:	Not applicable.
PH (1% aqueous solution)::	6.5 ± 0.5.
Specific gravity:	Not applicable.
Melting point/range (°C):	Not applicable.
Refractive index:	Not applicable.
Boiling point (°C):	Not applicable.
Solidification point:	Not applicable.
Flash point:	Not applicable.
Auto-ignition temperature:	Not applicable.
Ignition temperature:	≥ 260°C.

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Ignition point:	Not applicable.
Flammability:	Not applicable.
Upper/lower flammability or explosion limit:	Not applicable.
Decomposition:	Not applicable.
Relative density (Water=1) :	1.000-1.400.
Volume density:	Not applicable.
Solubility:	Not applicable.
Vapor pressure:	Not applicable.
Vapor density:	Not applicable.
Volatilization rate:	Not applicable.
Viscosity:	Not applicable.
Solid content:	Not applicable.
Others:	

Part 10 - Stability and reactivity

Stability:	Stable under normal conditions.
Hazardous reactions:	No information.
Conditions to avoid:	No information.
Incompatibility:	Strong oxidant, strong acid, strong base.
Harmful decomposition products:	Carbon monoxide (CO), carbon dioxide (CO ₂), sulfur oxide.

Part 11 - Toxicological information

Information on toxicological effects:

Acute toxicity:	LD50 of mice was 1.80,3.08,3.98,4.3 g / kg (JECFA 723 (1991), about 200004200 mg / kg (USEPA / HPV (2001)).
Skin irritation or corrosion:	In the 0.5 ml occlusive test on rabbits, the score of non injured skin after 24 hours was 2.33 (erythema), 2.5 (edema), the core value after 72 hours was 1.66 (erythema), 1.6 (edema) necrosis and irreversible changes were not seen (iucld (2000).
Eye irritation or corrosion:	No necrosis and irreversible changes were found in the 100 mg test on rabbits. In the description of irritancy (iucld (2000)), in the 250 µg test on rabbits, the description of mild irritancy (hpvis (2009)) was found.
Skin sensitization:	No data available.
Respiratory sensitization:	No data available.
Germ cell mutagenicity:	No data available.
Carcinogenicity:	No data available.
Reproductive toxicity:	In the experiment of feeding mixed food in the organogenesis period of pregnant mice, it was found that the amount of inhibitive dew, the increase of embryo absorption and the appearance deformity of the offspring increased significantly (JECFA 723 (1991)). In addition, in the three generations of feeding experiment (0.05, or 1.0%. Mixed feeding), according to the secretion of breast milk for the substance, it can be considered that it is due to the inhibition of weight gain caused by children's nutritional disorders and the reduction of survival rate (JECFA 723 (1991)), "additional differentiation: the effect caused by feeding or by feeding milk".

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Specific target organ system toxicity - single exposure: No data available.

Specific target organ system toxicity - repeated exposure: No data available.

Aspiration hazard: No data available.

Part 12 –Ecological information

Acute toxicity: 48 hour EC50 of crustaceans (omijinko) was 19.0 mg / L (EIA, 1999).

Persistence and degradability: In the case of chronic toxicity data, there was no rapid decomposition (hard decomposition, decomposition degree of BOD: 0, 9, 0% (existing examination, 1991)), and the NOEC of crustaceans (omijinko) in 21 days was 7.03 mg / L (EIA test, 1999).
Acute toxicity data were used in the nutritional stage where chronic toxicity data were not available. There was no rapid decomposition (hard decomposition, decomposition degree of BOD: 0, 9, 0% (existing examination, 1991)), and 96 hour LC50 of fish (medaka) was 68.2 mg / L (EIA ecological impact test, 1999).

Mobility in soil: No data available.

PBT and vPvB assessment results:

PBT: No data available.

vPvB: No data available.

Other adverse effects: No data available.

Part 13–Disposal considerations

Waste treatment methods Please refer to the requirements of relevant laws and regulations of your country or region before disposal.

Packaging: Please refer to the relevant laws and regulations of the country or region before disposal.

Part 14 - Transport information

UN Number: Non hazardous chemicals.

ADR, IMDG, IATA

UN proper shipping name: Non hazardous chemicals.

ADR, IMDG, IATA

Transport hazard class(es): Non hazardous chemicals.

ADR, IMDG, IATA

Packing group Non hazardous chemicals.

ADR, IMDG, IATA

Secondary risk: None.

Environmental hazard: None.

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Transportation Notes: No information.

Part 15 –Regulation information

GHS Labelling Elements: Classification and labelling are carried out according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Chemical safety assessment

For this mixture, no chemical safety assessment has been carried out.

Part 16 –Other information

MSDS Tabulation Date: 4th December 2019

Abbreviations and acronyms:

RID: Regulations Concerning the International Transport of Dangerous Goods by Rail
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)

This MSDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. Products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

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Photo attachment
Quick penetrating agent T

END OF REPORT.



Material Safety Data Sheet

Product Name: : Pipe free agents

Applicant: : Henan Ocean Chemical Technology Co.,Ltd.

Address: : Zhaigou Village,ChengguanTown,XinmiCity,Henan Province



Signed by Shanghai ICTS Group

Written by: Monica Fan

Date: 4th December 2019

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Material Safety Data Sheet (MSDS)

Part 1 –Identification of the substance and of the company/undertaking

Identification on the label	Pipe free agents
/Trade name:	
Common name:	/
Product uses:	/
Supplier(Manufacturer):	Henan Ocean Chemical Technology Co.,Ltd.
Address:	Zhaigou Village,ChengguanTown,XinmiCity,Henan Province
Code:	452370
Contact Person:	Zheng shukun
Telephone:	0371-63125777
Fax:	0371-63125777
Emergency contact:	
Contact Person:	Zheng shukun
Telephone:	0371-63125777
Mobile phone:	+86 18135698989
Fax:	0371-63125777
Email:	henanhaiyang168@163.com

Part 2 –Hazards Identification

Classification of the substance or mixture:	
GHS label elements:	This product is not a hazardous substance or mixture.
Hazard Pictograms:	None.
Signal Word(S):	None.
Physicochemical hazards:	According to the current information, there is no physicochemical hazard.
Health hazard:	According to the current information, there is no health hazard.
Acute toxicity (oral):	No classification.
Acute toxicity (transdermal):	No classification.
Acute toxicity (inhalation: gas):	No classification.
Acute toxicity (inhalation: vapour):	No classification.
Acute toxicity (inhalation: dust and spray):	No classification.
Skin corrosion/irritation:	No classification.
Severe eye injury/eye irritation:	No classification.
Respiratory hypersensitivity:	No classification.

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Skin sensibility:	No classification.
Germ cell mutagenicity:	No classification.
Carcinogenicity:	No classification.
Reproductive toxicity:	No classification.
Heterologous target organ toxicity - single exposure:	No classification.
Heterologous target organ toxicity - repeated exposure:	No classification.
Aspiration hazard:	No classification.
Environmental hazards:	According to the current information, there is no environmental hazard.
Acute toxicity to water environment:	No classification.
Slow toxicity to water environment:	No classification.
Precautions:	
Waste disposal:	P501 This product and container shall be disposed in accordance with local, regional, national and international regulations.

Part 3 - Composition/information on ingredients

Substance/Mixture:	Chemical Name	CAS No.	Content %
	Asphalt powder	68201-32-1	75%
	Organic soil	1340-68-7	25%

Part 4 –First aid measures

In case of skin contact:	Wash with soap and plenty of water. If symptoms appear, seek medical treatment immediately.
In case of eyes contact:	If in eyes: Rinse carefully with water for a few minutes, remove contact lenses, and continue to rinse if available and easy to do.
In case of ingestion:	Rinse your mouth with water and drink plenty of water. If symptoms appear, seek medical treatment.
Signs requiring immediate medical attention and special treatment:	Symptomatic treatment.

After the above measures, contact the doctor and receive the doctor's treatment as needed.

Part 5 - Fire-Fighting measures

Suitable fire extinguishers:	Use fire extinguishing agent suitable for the surrounding environment.
Special hazards caused by chemicals:	Thermal decomposition causes the release of irritating gases and vapors.
Special protective equipment	Firefighters should wear appropriate protective equipment and self-contained

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for firefighters: breathing apparatus, and a full set of protective clothing if necessary.

Part 6 –Accidental release measures.

Personal protective measures, protective equipment, emergency measures:	Use personal protective equipment. Ensure adequate ventilation. Evacuate people to a safe area.
Environmental Precautions:	Do not allow product to enter the drain. If safe, prevent further leakage.
Containment, removal methods and disposal materials used for leaking chemicals:	Clean up. Transfer to a properly labeled container for processing. Thoroughly clean the spill area with plenty of water. Do not let the product into the sewer.
Refer to other sections:	For information on safe operation, refer to section 7. For information on personal protective equipment, see Section 8. See section 13 for disposal information.

Part 7 - Handling and storage

Handling:	Ensure that the work area has sufficient exhaust ventilation. Prevent the generation of dust.
Storage:	Place in a cool, dry and well ventilated place. Keep container tightly closed.

Part 8 - Exposure control/personal protection

Occupational exposure limits:	No information.
Engineering measures:	Make sure the working area is well ventilated. Provide safety shower and eye wash.
Individual protection measures, such as personal protective equipment:	
Skin & body protection:	Wear protective clothing.
Eye protection:	Safety glasses with side shields (EU standard-EN166).
Hand protection:	Chemical resistant gloves (NBR).
Hygienic protection:	Wash hands after use.

Part 9 - Physical and chemical properties

Appearance :	Powder and particles.
Colour:	Light grey.
Odor:	Not applicable.
Odor threshold:	Not applicable.
Molecular weight:	Not applicable.
Molecular formula:	Not applicable.
Molar mass:	Not applicable.
PH:	8-10.
Specific gravity:	Not applicable.

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Density:	1.02g/cm ³ .
Melting point/range (°C):	600 °C.
Refractive index:	Not applicable.
Boiling point (°C):	Not applicable.
Solidification point:	Not applicable.
Flash point:	None.
Auto-ignition temperature:	500 °C.
Ignition temperature:	Not applicable.
Ignition point:	Not applicable.
Flammability:	Not applicable.
Upper/lower flammability or explosion limit:	Not applicable.
Decomposition:	Not applicable.
Relative density (Water=1) :	Not applicable.
Volume density:	Not applicable.
Solubility:	Not applicable.
Vapor pressure:	Not applicable.
Vapor density:	Not applicable.
Volatilization rate:	Not applicable.
Viscosity:	Not applicable.
Solid content:	Not applicable.
Others:	

Part 10 - Stability and reactivity

Stability:	Stable under normal conditions.
Hazardous reactions:	No information.
Conditions to avoid:	No information.
Incompatibility:	Strong oxidant.
Harmful decomposition products:	No information.

Part 11 –Toxicological information

Information on toxicological effects:

Acute toxicity:	No data available.
Skin irritation or corrosion:	No data available.
Eye irritation or corrosion:	No data available.
Skin sensitization:	No data available.
Respiratory sensitization:	No data available.
Germ cell mutagenicity:	No data available.
Carcinogenicity:	No data available.
Reproductive toxicity:	No data available.
Specific target organ system toxicity - single exposure:	No data available.
Specific target organ system toxicity - repeated exposure:	No data available.

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repeated exposure:	
Aspiration hazard:	No data available.

Part 12 –Ecological information

Acute toxicity:	No data available.
Persistence and degradability:	No data available.
Mobility in soil:	No data available.
PBT and vPvB assessment results:	
PBT:	No data available.
vPvB:	No data available.
Other adverse effects:	No data available.

Part 13–Disposal considerations

Waste treatment methods	Please refer to the requirements of relevant laws and regulations of your country or region before disposal.
Packaging:	Please refer to the relevant laws and regulations of the country or region before disposal.

Part 14 - Transport information

UN Number:	Non hazardous chemicals.
ADR, IMDG, IATA	
UN proper shipping name:	Non hazardous chemicals.
ADR, IMDG, IATA	
Transport hazard class(es):	Non hazardous chemicals.
ADR, IMDG, IATA	
Packing group	Non hazardous chemicals.
ADR, IMDG, IATA	
Secondary risk:	None.
Environmental hazard:	None.
Transportation Notes:	No information.

Part 15 –Regulation information

GHS Labelling Elements: Classification and labelling are carried out according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Chemical safety assessment

For this mixture, no chemical safety assessment has been carried out.

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Part 16 –Other information

MSDS Tabulation Date: 4th December 2019

Abbreviations and acronyms:

RID: Regulations Concerning the International Transport of Dangerous Goods by Rail
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 vPvB: very Persistent and very Bioaccumulative
 ACGIH: American Conference of Governmental Industrial Hygienists (USA)
 OSHA: Occupational Safety and Health Administration (USA)
 NTP: National Toxicology Program (USA)
 IARC: International Agency for Research on Cancer
 EPA: Environmental Protection Agency (USA)

This MSDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. Products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

Photo attachment

Pipe free agents



END OF REPORT.



Material Safety Data Sheet

Product Name: : Carboxymethyl cellulose (Low viscosity) CMC-LVT

Applicant: : Henan Ocean Chemical Technology Co.,Ltd.

Address: : Zhaigou Village,ChengguanTown,XinmiCity,Henan Province



Signed by Shanghai ICTS Group

Written by: Monica Fan

Date: 4th December 2019

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Material Safety Data Sheet (MSDS)

Part 1 –Identification of the substance and of the company/undertaking

Identification on the label
/Trade name: Carboxymethyl cellulose (Low viscosity) CMC-LVT
Common name: /
Product uses: /
Supplier(Manufacturer): Henan Ocean Chemical Technology Co.,Ltd.
Address: Zhaigou Village,ChengguanTown,XinmiCity,Henan Province
Code: 452370
Contact Person: Zheng shukun
Telephone: 0371-63125777
Fax: 0371-63125777
Emergency contact:
Contact Person: Zheng shukun
Telephone: 0371-63125777
Mobile phone: +86 18135698989
Fax: 0371-63125777
Email: henanhaiyang168@163.com

Part 2 –Hazards Identification

Classification of the substance or mixture:
GHS label elements: Acute toxicity (oral): Category 5.
Hazard Pictograms: None.
Signal Word(S): Warning.
Physicochemical hazards: According to the current information, there is no physicochemical hazard.
Health hazard:
Acute toxicity (oral): Category 5,
 May be harmful if swallowed.
Acute toxicity (transdermal): No classification.
Acute toxicity (inhalation: gas): No classification.
Acute toxicity (inhalation: vapour): No classification.
Acute toxicity (inhalation: dust and spray): No classification.
Skin corrosion/irritation: No classification.
Severe eye injury/eye irritation: No classification.

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Respiratory hypersensitivity:	No classification.
Skin sensibility:	No classification.
Germ cell mutagenicity:	No classification.
Carcinogenicity:	No classification.
Reproductive toxicity:	No classification.
Heterologous target organ toxicity - single exposure:	No classification.
Heterologous target organ toxicity - repeated exposure:	No classification.
Aspiration hazard:	No classification.
Environmental hazards:	According to the current information, there is no environmental hazard.
Acute toxicity to water environment:	No classification.
Slow toxicity to water environment:	No classification.
Precautions:	
Precautions:	P270: do not eat or smoke when using this product.
Accident response:	P301 + P312: when swallowing: contact your doctor if you feel unwell.
Secure storage:	P403 store in a well ventilated place.
Waste disposal:	P501 This product and container shall be disposed in accordance with local, regional, national and international regulations.

Part 3 - Composition/information on ingredients

Substance/Mixture:	Mixture		
	Chemical Name	CAS No.	Content %
	Sodium carboxymethylcellulose	9004-32-4	95%
	Sodium chloride	7647-14-5	5%

Part 4 - First aid measures

In case of skin contact:	Wash with soap and plenty of water. If symptoms appear, seek medical treatment immediately.
In case of eyes contact:	If in eyes: Rinse carefully with water for a few minutes, remove contact lenses, and continue to rinse if available and easy to do.
In case of ingestion:	Rinse your mouth with water and drink plenty of water. If symptoms appear, seek medical treatment.
Signs requiring immediate medical attention and special treatment:	Symptomatic treatment.

After the above measures, contact the doctor and receive the doctor's treatment as needed.

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Part 5 - Fire-Fighting measures

Suitable fire extinguishers:	Foam, carbon dioxide, dry powder.
Special hazards caused by chemicals:	Thermal decomposition causes the release of irritating gases and vapors.
Special protective equipment for firefighters:	Firefighters should wear appropriate protective equipment and self-contained breathing apparatus, and a full set of protective clothing if necessary.

Part 6 - Accidental release measures.

Personal protective measures, protective equipment, emergency measures:	Use personal protective equipment. Ensure adequate ventilation. Evacuate people to a safe area.
Environmental Precautions:	Do not allow product to enter the drain. If safe, prevent further leakage.
Containment, removal methods and disposal materials used for leaking chemicals:	Clean up. Transfer to a properly labeled container for processing. Thoroughly clean the spill area with plenty of water. Do not let the product into the sewer.
Refer to other sections:	For information on safe operation, refer to section 7. For information on personal protective equipment, see Section 8. See section 13 for disposal information.

Part 7 - Handling and storage

Handling:	Ensure that the work area has sufficient exhaust ventilation. Prevent the generation of dust.
Storage:	Place in a cool, dry and well ventilated place. Keep container tightly closed.

Part 8 - Exposure control/personal protection

Occupational exposure limits:	No information.
Engineering measures:	Make sure the working area is well ventilated. Provide safety shower and eye wash.
Individual protection measures, such as personal protective equipment:	
Skin & body protection:	Wear protective clothing.
Eye protection:	Safety glasses with side shields (EU standard-EN166).
Hand protection:	Chemical resistant gloves (PVC).
Hygienic protection:	Wash hands after use.

Part 9 - Physical and chemical properties

Appearance :	Fibrous powder.
Colour:	White or light yellow.

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Odor:	Odorless.
Odor threshold:	Not applicable.
Molecular weight:	Not applicable.
Molecular formula:	Not applicable.
Molar mass:	Not applicable.
PH:	Neutral.
Specific gravity:	1.6.
Melting point/range (°C):	>200°C.
Freezing point:	>200°C.
Refractive index:	Not applicable.
Boiling point (°C):	Not applicable.
Solidification point:	Not applicable.
Flash point:	Not applicable.
Auto-ignition temperature:	Not applicable.
Ignition temperature:	Not applicable.
Ignition point:	Not applicable.
Flammability:	Not applicable.
Upper/lower flammability or explosion limit:	Not applicable.
Decomposition:	Not applicable.
Relative density (Water=1) :	1.6.
Volume density:	Not applicable.
Solubility:	Part is acid soluble, part is water soluble.
Vapor pressure:	Not applicable.
Vapor density:	0.98.
Volatilization rate:	Not applicable.
Viscosity:	Not applicable.
Solid content:	Not applicable.
Others:	

Part 10 - Stability and reactivity

Stability:	Stable under normal conditions.
Hazardous reactions:	No information.
Conditions to avoid:	No information.
Incompatibility:	Strong oxidant.
Harmful decomposition products:	Carbon monoxide (CO), carbon dioxide (CO ₂), hydrogen chloride gas, sodium oxide.

Part 11 –Toxicological information

Information on toxicological effects:

Acute toxicity:	Sodium carboxymethylcellulose: Oral: LD50 = 27000 mg / kg (rat). Skin: LD50 > 2 g / kg (rabbit). Inhalation: LC50 > 5800 mg / m ³ (rat) for 4 h. Sodium chloride: Oral: LD50 = 3 g / kg (rat). Skin: LD50 > 10 g / kg (rabbit).
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Skin irritation or corrosion:	Inhalation: LC50 > 42 g / m ³ (rat) for 1 h. No data available.
Eye irritation or corrosion:	No data available.
Skin sensitization:	No data available.
Respiratory sensitization:	No data available.
Germ cell mutagenicity:	No data available.
Carcinogenicity:	No data available.
Reproductive toxicity:	No data available.
Specific target organ system toxicity - single exposure:	No data available.
Specific target organ system toxicity - repeated exposure:	No data available.
Aspiration hazard:	No data available.

Part 12 –Ecological information

Acute toxicity:	Sodium chloride: Pimephals prome:LC50: 7650 mg/L/96h. Daphnia: EC50: 1000 mg / L / 48h.
Persistence and degradability:	No data available.
Mobility in soil:	No data available.
PBT and vPvB assessment results:	
PBT:	No data available.
vPvB:	No data available.
Other adverse effects:	No data available.

Part 13–Disposal considerations

Waste treatment methods	Please refer to the requirements of relevant laws and regulations of your country or region before disposal.
Packaging:	Please refer to the relevant laws and regulations of the country or region before disposal.

Part 14 - Transport information

UN Number:	Non hazardous chemicals.
ADR, IMDG, IATA	
UN proper shipping name:	Non hazardous chemicals.
ADR, IMDG, IATA	
Transport hazard class(es):	Non hazardous chemicals.
ADR, IMDG, IATA	

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Web: www.ictsgroup.cn

Report No.: ICTS20191204MOE/102

Packing group Non hazardous chemicals.

ADR, IMDG, IATA

Secondary risk: None.

Environmental hazard: None.

Transportation Notes: No information.

Part 15 –Regulation information

GHS Labelling Elements: Classification and labelling are carried out according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Chemical safety assessment

For this mixture, no chemical safety assessment has been carried out.

Part 16 –Other information

MSDS Tabulation Date: 4th December 2019

Abbreviations and acronyms:

RID: Regulations Concerning the International Transport of Dangerous Goods by Rail
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 vPvB: very Persistent and very Bioaccumulative
 ACGIH: American Conference of Governmental Industrial Hygienists (USA)
 OSHA: Occupational Safety and Health Administration (USA)
 NTP: National Toxicology Program (USA)
 IARC: International Agency for Research on Cancer
 EPA: Environmental Protection Agency (USA)

This MSDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. Products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

Report No.: ICTS20191204MOE/102

Photo attachment

Carboxymethyl cellulose (Low viscosity) CMC-LVT



END OF REPORT.



MATERIAL SAFETY DATA SHEET

Product Name : Viscosity reducer for drilling fluid, Organosilicon GX-1

Applicant : Henan Ocean Chemical Technology Co.,Ltd.

Address : Zhaigou Village Chengguan Town,Xinmi City,Henan Province



Signed by Shanghai ICTS Group

Written by : Star Gao

Date: 07th Jan. 2019



MATERIAL SAFETY DATA SHEET (MSDS)

Section 1 – Chemical Product and Company Identification

Product name: Viscosity reducer for drilling fluid, Organosilicon
Type: GX-1
Manufacturer: Henan Ocean Chemical Technology Co.,Ltd.
Address: Zhaigou Village Chengguan Town,Xinmi City,Henan Province,China
Post Code: 452370
Tel: 0371-63125777
Fax: 0371-63125777
Information in case of emergency
Contact: Zheng shukun
Tel: 0371-63125777
Fax: 0371-63125777
Mobile phone: +86 18135698989
Email: henanhaiyang168@163.com

Section 2 – Hazards Identification

Classification of the chemical

Classification of the substance or mixture

GHS Classification in accordance with UN GHS Rev.7

This product is not a hazardous substance or mixture.

GHS Label elements, including precautionary statements

Pictogram(s): Not applicable.
Signal word: Not applicable.
Hazard statements: Not applicable.
Precautionary statements Not applicable.

Description of any hazards not otherwise classified

No information available.

Ingredient with unknown acute toxicity

No information available.

Section 3 – Composition/Information on Ingredient

Chemical name	CAS No.	Content (%)
Non-ionic surface active agent	-	30%
Etanol	64-17-5	30%
Water	7732-18-5	30%
Long-chain alkane carboxylic esters	1310-73-2	10%

Section 4 – First Aid Measures

Skin contact:	Remove immediately any soiled clothing. Wash Skin with plenty of water and soap. If irritation occurs and persists, contact a doctor.
Eyes contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, continue rinsing. If irritation occurs and persists, contact a doctor immediately.
Inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion:	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5 – Fire Fighting Measures

Suitable Extinguishing Media:	Use dry chemical, carbon dioxide, or chemical foam.
Special hazards arising from the chemical:	Thermal decomposition products - carbon monoxide, carbon dioxide, etc.
Special protective equipment for firefighters:	Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. Use firefighting procedures suitable for surrounding area. Do not approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire.

Section 6 – Accidental Release Measures

For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international

regulations.

Personal precautions, protective equipment and emergency procedures:

Use suitable personal protective equipment, see section 8. Avoid direct contact with spillage. Evacuate personnel to safe areas.

Environmental precautions:

Attempt to stop leak if without undue personnel hazard. Keep material out of water courses and sewers.

Methods and materials for containment and cleaning up:

Collect leaked products into labelled containers for recycling or disposal. Wash area and prevent runoff into drains. After clean-up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

Section 7 – Handling and Storage

Handling:	Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with moisture. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Wash thoroughly after handling, before eating, drinking and smoking.
Storage:	Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area.

Section 8 – Exposure Controls, Personal Protection

Maximum admissible concentration

Ingredients with limit values that require monitoring at the workplace:

Data not available.

Monitoring Method: Data not available.

Engineering Control: Provide safe shower and eye wash fountain.

Personal protective equipment:

Respiratory Protection: No respiratory protection required. Wear respiratory protection if there is a risk of exposure to high vapor concentrations, aerosols.

Eyes Protection: Not required under normal condition. If slashing in-eye may occur, Use chemical safety goggles.

Body Protection: General work suit.

Hands Protection: Handle with chemical-resistant gloves.

Other Protections: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Section 9 – Physical and Chemical Properties

Appearance	Milky viscous liquid.
Odor	Odorless.
Odor threshold	Not available.
pH	7
Melting point/freezing point	Not available.
Initial boiling point and boiling range	120℃.
Flash point	Not available.
Evaporation rate	Not available.
Flammability	Not available.
Upper explosive limit %(V/V):	Not applicable.
Lower explosive limit %(V/V):	Not applicable.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.93.
Solubility(ies)	Soluble in water.
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Molecular weight	Not available.

Section 10 – Stability and Reactivity

Stability:	Stable under normal temperature and pressure.
Distribution of Ban:	Strong oxides.
Conditions to Avoid:	Heat, flames and sparks.
Hazardous Decomposition Products:	No known hazardous decomposition products under normal condition.
Hazardous Polymerization:	Will not occur.

Section 11 – Toxicological Information

Acute Toxicity:	No data available.
Sub-acute and Chronic Toxicity:	No known significant effects or critical hazards.
Skin corrosion/irritation:	May cause slight skin irritation by repeated contact.
Serious eye damage/eye irritation:	May cause slight eye irritation.
Sensitization:	No known significant effects or critical hazards.
Mutagenicity:	No known significant effects or critical hazards.
Carcinogenicity:	
IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive Toxicity:	No known significant effects or critical hazards.
Specific Target Organ Toxicity - Single Exposure :	No known significant effects or critical hazards.
Specific Target Organ Toxicity - Repeated Exposure:	No known significant effects or critical hazards.

Section 12 – Ecological Information

Ecotoxicity:	No data available.
Persistence and degradability:	No data available.
Bioaccumulative potential:	No data available.
Other harmful effects:	No known significant effects or critical hazards.

Section 13 – Disposal Considerations

Waste information:	Firstly should consider the recovery or recycling as possible. Disposal must be made according to local and national regulations.
Disposal notice:	Disposal area must comply with the environment and national safety standard.

Section 14 – Transport Information

UN Number:	Not regulated as dangerous goods.
ADR, IMDG, IATA	
UN proper shipping name:	Not regulated as dangerous goods.

ADR, IMDG, IATA
Transport hazard class(es): Not regulated as dangerous goods.

ADR, IMDG, IATA
Packing group: Not regulated as dangerous goods.

ADR, IMDG, IATA
Environmental hazards: No.

Special precautions for user: No information available.

Section 15 – Regulatory Information

This safety data sheet complies with the requirements of UN GHS Rev.7 and OSHA Hazard Communication Standards (29 CFR 1910.1200).

Safety, health and environmental regulations/legislation specific for the substance or mixture

No information available.

Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

Section 16 – Additional Information
MSDS Creation Date: 07th Jan. 2019

This MSDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. Products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

Photo attachment

Viscosity reducer for drilling fluid, Organosilicon GX-1



END OF REPORT

เอกสารข้อมูลความปลอดภัยสารเคมี

WEIGHTING MATERIAL (CaCO₃)

1.0 ข้อมูลเกี่ยวกับสารเคมีและบริษัทผู้ผลิตและจัดจำหน่าย

ชื่อผลิตภัณฑ์: CaCO₃

สูตรทางเคมี: CaCO₃

สภาพปรากฏ: สีขาว Solid powder

2.0 ข้อมูลเกี่ยวกับอันตราย

ไม่มีพิษ

3.0 มาตรการปฐมพยาบาล

การสัมผัสถูกดวงตา: ในกรณีที่เข้าตา ให้ล้างด้วยน้ำปริมาณมากในทันที โดยเปิดให้น้ำไหลชะดวงตาเป็นเวลา 15 นาทีขณะที่ลืมตาไว้ แล้วปรึกษาแพทย์

การสัมผัสทางผิวหนัง: ถอดเสื้อผ้าที่ปนเปื้อนออกทันที ให้ล้างด้วยน้ำเปล่าปริมาณมากเป็นเวลาอย่างน้อย 15 นาที ล้างเสื้อผ้าที่ปนเปื้อนสารก่อนใช้อีกครั้ง แล้วปรึกษาแพทย์

การกลืนกิน: ห้ามใช้ปากสัมผัสผู้อื่น บ้วนปากทันทีแล้วดื่มน้ำหรือนม 2-4 แก้ว ห้ามทำให้อาเจียน เข้าพบแพทย์ทันที

การสูดดม: นำส่งอากาศบริสุทธิ์ทันที หากไม่หายใจ ให้ทำการผายปอด หากการหายใจไม่สม่ำเสมอ ให้ทำการให้ออกซิเจน ให้ขอความช่วยเหลือจากแพทย์และเริ่มต้นการปฐมพยาบาลในทันที

สำหรับแพทย์ผู้รักษา: รักษาดมอาการ

การจัดการพิษ: การใช้ metal chelate ต้องดำเนินการโดยผู้ที่ผ่านการรับรองทางการแพทย์เท่านั้น

4.0 การขนส่ง เคลื่อนย้าย ใช้งาน และการเก็บรักษา

มาตรการป้องกันสำหรับการขนถ่ายเคลื่อนย้ายอย่างปลอดภัย: ลดการสะสมของฝุ่นละออง หลีกเลี่ยงการสัมผัสกับดวงตา ผิวหนัง และเสื้อผ้า เก็บภาชนะบรรจุให้ปิดแน่น ใช้เมื่อมีการระบายอากาศที่เพียงพอ หลีกเลี่ยงการสูดดม

การจัดเก็บอย่างปลอดภัย: เก็บรักษาไว้ในที่เย็น แห้ง และอากาศถ่ายเทดี เก็บภาชนะบรรจุให้ปิดแน่น

5.0 การควบคุมการรับสัมผัสและการป้องกันส่วนบุคคล

การควบคุมทางวิศวกรรมที่เหมาะสม: จำเป็นต้องมีการระบายอากาศภายในพื้นที่เพื่อควบคุมมลพิษทางอากาศในระหว่างการใช้ผลิตภัณฑ์นี้ พื้นที่จัดเก็บและใช้งานควรจัดให้มีฝักบัวดูดฝุ่นและอ่างล้างตา

อุปกรณ์ป้องกันส่วนบุคคล

การป้องกันตา: ใช้แว่นตาหรือก๊วกซ์ที่มีการป้องกันด้านข้างหรือป้องกันสารเคมี

การป้องกันผิวหนัง: สวมถุงมือที่เหมาะสมเพื่อป้องกันการสัมผัสกับผิวหนัง

เครื่องแต่งกาย: สวมชุดป้องกันที่เหมาะสมเพื่อลดการสัมผัสทางผิวหนัง

Treatment agent consumption in 2024 (final edition)													
Name	Description	Total	Wastage							QTY	Unit		
			BM3-1	BM3-2									
两性离子聚合物包被剂	FA-367	12.000	1.5							10.500	TON	3400	5100
铵盐	NPAN	54.400	3							51.400	TON	1440	4320
磺化沥青	FT-342	32.000	5							27.000	TON	1500	7500
抗高温降滤失剂	KJ-1	87.000	13							74.000	TON	1500	19500
液体润滑剂	RH-3	95.400	16.8							78.600	TON	1390	23352
液体润滑剂	RH-4	5.000								5.000	TON	2000	0
塑料小秋	HZN-102	7.350	0.4							6.950	TON	2700	1080
消泡剂	XP186	10.000	3							7.000	TON	1980	5940
石墨	RH-2	70.000	6							64.000	TON		0
有机硅稀释剂	GX-1	18.000	4							14.000	TON		0
土粉	Bentonite	48.000	5							43.000	TON	520	2600
纤维素	HV-CMC	3.000								3.000	TON	2050	0
纤维素	LV-CMC	4.000								4.000	TON		0
纯碱	Na2CO3	1.000	0.2							0.800	TON		0
烧碱	NaOH	2.000	0.5							1.500	TON		0
随堵	SDL	8.400								8.400	TON		0
桥堵	QDL	18.600								18.600	TON		0
CaCO3	LP	191.000								191.000	TON		0
CaO	CaO	123.200								123.200	TON		0
重晶石	BP	192.000								192.000	TON		0
碱式碳酸锌	JN-2	0.000								0.000	TON		0
解卡剂	pipe free agents	4.000								4.000	TON		0
快T	Quick penetrating agent T	0.400								0.400	TON		0
													69392

Amphoteric polymer (FA-367)

1.0 Chemical Product and Company Identification

Product Name: Amphoteric polymer (FA-367)

2.0 Hazard Identification/ Potential Health Effects

Faint or non toxicity.

3.0 First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of a metal chelate should be determined only by qualified medical personnel.

4.0 Handling and Storage

Handling: Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

5.0 Exposure Controls, Personal Protection

Engineering Controls: Local exhaust ventilation may be necessary to control any air contamination during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

MATERIAL SAFETY DATA SHEET

Carboxymethylcellulose sodium (Hv-CMC)

1.0 Chemical Product and Company Identification

Product Name: Carboxymethylcellulose sodium (Hv-CMC)

Formula: $C_8H_{16}NaO_8$

Appearance: white Solid powder

Producer: Henan Haiyang chemical Co., Ltd.

Tel: +86-371-55019778

Fax: +86-371-55019778

2.0 Hazard Identification/ Potential Health Effects

non toxicity.

3.0 First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of a metal chelate should be determined only by qualified medical personnel.

4.0 Handling and Storage

Handling: Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

5.0 Exposure Controls, Personal Protection

Engineering Controls: Local exhaust ventilation may be necessary to control any air contamination during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

MATERIAL SAFETY DATA SHEET

WEIGHTING MATERIAL (CaO)

1.0 Chemical Product and Company Identification

Product Name: CaO

Formula: CaO

Appearance: white Solid powder

2.0 Hazard Identification/ Potential Health Effects

non toxicity.

3.0 First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Flush skin with plenty of water for at least 5 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of a metal chelate should be determined only by qualified medical personnel.

4.0 Handling and Storage

Handling: Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

5.0 Exposure Controls, Personal Protection

Engineering Controls: Local exhaust ventilation may be necessary to control any air contamination during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

MATERIAL SAFETY DATA SHEET

Anti-high temper. filtrate reducer ((KJ-1)

1.0 Chemical Product and Company Identification

Product Name: Anti-high temper. filtrate reducer (KJ-1)

Formula: $(C_3H_3O_2Na)_m (C_3H_3N)_n (C_3H_5ON)_p (C_8H_5O_6NNaR')_q$

Appearance: Black brown Solid powder

Producer: Henan Haiyang chemical Co., Ltd.

Tel: +86-371-55019778

Fax: +86-371-55019778

2.0 Hazard Identification/ Potential Health Effects

Faint or non toxicity.

3.0 First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of a metal chelate should be determined only by qualified medical personnel.

4.0 Handling and Storage

Handling: Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

5.0 Exposure Controls, Personal Protection

Engineering Controls: Local exhaust ventilation may be necessary to control any air contamination during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

MATERIAL SAFETY DATA SHEET

Drilling fluid solid lubricant

1.0 Chemical Product and Company Identification

Product Name: Drilling fluid solid lubricant

Formula: $(CH_2CHC_6H_4SO_3H)_n (CH_2CH)_2C_6H_4$

Appearance: white plastic beads

Producer: Henan Haiyang chemical Co., Ltd.

Tel: +86-371-55019778

Fax: +86-371-55019778

2.0 Hazard Identification/ Potential Health Effects

non toxicity.

3.0 First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of a metal chelate should be determined only by qualified medical personnel.

4.0 Handling and Storage

Handling: Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

5.0 Exposure Controls, Personal Protection

Engineering Controls: Local exhaust ventilation may be necessary to control any air contamination during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

MATERIAL SAFETY DATA SHEET
Drilling fluid new lubricant (RH-2)

1.0 Chemical Product and Company Identification

Product Name: Drilling fluid new lubricant (RH-2)

Appearance: Black brown Solid powder

Producer: Henan Haiyang chemical Co., Ltd.

Tel: +86-371-55019778

Fax: +86-371-55019778

2.0 Hazard Identification/ Potential Health Effects

Faint or non toxicity.

3.0 First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of a metal chelate should be determined only by qualified medical personnel.

4.0 Handling and Storage

Handling: Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible

5.0 Exposure Controls, Personal Protection

Engineering Controls: Local exhaust ventilation may be necessary to control any air contamination during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

MATERIAL SAFETY DATA SHEET

LOST CIRCULATION MATERIAL (QDL)

1.0 Chemical Product and Company Identification

Product Name: QDL

Formula:

Appearance: white brown and gray grains fibers

2.0 Hazard Identification/ Potential Health Effects

non toxicity.

3.0 First Aid Measures

Eyes: Flush eyes with plenty of water for at least 10 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Flush skin with plenty of water for at least 5 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of a metal chelate should be determined only by qualified medical personnel.

4.0 Handling and Storage

Handling: Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

5.0 Exposure Controls, Personal Protection

Engineering Controls: Local exhaust ventilation may be necessary to control any air contamination during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

MATERIAL SAFETY DATA SHEET

LOST CIRCULATION MATERIAL (SDL)

1.0 Chemical Product and Company Identification

Product Name: SDL

Formula:

Appearance: white yellowish soft fluff material

2.0 Hazard Identification/ Potential Health Effects

non toxicity.

3.0 First Aid Measures

Eyes: Flush eyes with plenty of water for at least 10 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Flush skin with plenty of water for at least 5 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of a metal chelate should be determined only by qualified medical personnel.

4.0 Handling and Storage

Handling: Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

5.0 Exposure Controls, Personal Protection

Engineering Controls: Local exhaust ventilation may be necessary to control any air contamination during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

MATERIAL SAFETY DATA SHEET

Drilling fluid lubricant (RH-3)

1.0 Chemical Product and Company Identification

Product Name: Drilling fluid lubricant (RH-3)

Formula: $\text{CH}_3(\text{CH}_2)_7\text{CH}=\text{CH}(\text{CH}_2)_7\text{COOCH}_2\text{CH}_3$

Appearance: Black brown liquid

Producer: Henan Haiyang chemical Co., Ltd.

Tel: +86-371-55019778

Fax: +86-371-55019778

2.0 Hazard Identification/ Potential Health Effects

Faint or non toxicity.

3.0 First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of a metal chelate should be determined only by qualified medical personnel.

4.0 Handling and Storage

Handling: Avoid contact with eyes, skin, and clothing. Avoid breaking iron barrel.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

5.0 Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

MATERIAL SAFETY DATA SHEET

Defoamer (XP186)

1.0 Chemical Product and Company Identification

Product Name: defoamer (XP186)

Formula: $((\text{CH}_3)_3\text{SiO})((\text{CH}_3)_2\text{SiO})_n(\text{CH}_3\text{SiO})$

Apperance: white liquid

Producer: Henan Haiyang chemical Co., Ltd.

Tel: +86-371-55019778

Fax: +86-371-55019778

2.0 Hazard Identification/ Potential Health Effects

None toxicity.

3.0 First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of a metal chelate should be determined only by qualified medical personnel.

4.0 Handling and Storage

Handling: Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Use only with adequate ventilation. Avoid breathing dust.

Storage: Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

5.0 Exposure Controls, Personal Protection

Engineering Controls: Local exhaust ventilation may be necessary to control any air contamination during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

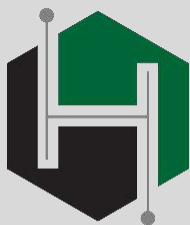
Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

ระยะผลิตปิโตรเลียม
(การผลิตปิโตรเลียม)

**HEXACON**

TECHNICAL DATA SHEET

EYP-2203**PU Foam**

Product Description

EYP-2203 PU Foam is one-component multi-purpose polyurethane foam that dispenses form.

PU Foam will expand and cure by moisture in the air and used for a wide range of building applications.

It is very good for filling and sealing capacities, excellent mounting capacities, stable, high thermal and acoustical insulation.

Typical Properties

Color	Champagne
Density (g/cm ³)	2.7±0.1
Tack free time	7-15 min
Cutting time	1-2 hr (25°C)
Drying time	20-25 min
Specific Gravity	17-22 kg/m ³
Yield	40-45 L
Insulation factor	<36 mW/m·K
Adhesive strength	>75 kPa
Tensile strength	>28 (10%) kPa
Compressive strength	>110 kPa
Cellular structure	80-85 % (close cell)
Water absorption (ml)	2-3 (no epidermis) <0.5 (with epidermis)
Fire Class	B3
Environment	No CFC's No HCFC's Ozone friendly
Toxicity of cured foam	Non-toxicity
Service temperature range	-40 – 80 °C
Application temperature range	5-35 °C

Working Method

- Remove all loose particles and apply face onto clean, dust free surfaces. Moisten surface lightly with water using a plant sprinkler for optimum result.
- For best results apply the foam at a can temperature above 5 °C and an environment temperature of 0 °C
- Shake firmly, at least 20 times, before every use.
- Screw the adaptor firmly on to the valve.
- To apply foam turn the can upside down and press the adaptor.
- Do not apply in a thickness over 4 cm.
- In closed rooms. After 1 hour the foam can be cut. After 24 hours the foam can be painted and plastered over.
- Do not fill the joint more than 50% as post expansion will totally fill the hole.
- Use can in one time.
- Remove fresh foam with acetone.

Application

- PU Foam good adhesion to a wide variety of surfaces such as UPVC, masonry, brick, block work, glass, steel, aluminum, timber and other substrates (except PP, PE and Teflon).
- PU Foam suitable for installing, fixing and insulating of door and window frames, filling and sealing of gaps, joint, openings and cavities, connecting of insulation materials and roof construction, bonding and mounting, insulating the electrical outlets and water pipes, heat preservation, cold and sound insulation.

Safety Precaution

- Contains Diphenylmethane-4,4'-diisocyanate, harmful by inhalation, irritating to eyes, respiratory system and skin, in case of eye contact, flush with water and get immediate medical attention
- Do not breathe spray/vapor
- Use in well-ventilated areas
- Wear suitable protective clothing, gloves and goggles
- Pressurized container; Keep away from direct sunlight and do not expose temperatures over 50°C
- Do not burn or pierce, even after use.
- Keep away from heat, sparks flames and static electricity.
- Turn off sources of ignition (pilot light etc.)
- Keep out of reach of children

Storage

- Store in dry and cool place below 35 °C.
- Do not store lie down, container must be store upright.
- Use within 12 months from the date of manufacturing.

Safety data sheet according to Regulation

DEMULSIFIER OF CYULE OIL

1. Identification of the substance/mixture and of the company/undertaking

Product identifier

DEMULSIFIER OF CYULE OIL

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Raw material for the chemical-technical industry

Details of the supplier of the safety data sheet

Company

Zhonghao Petrochemical Aids Co.Ltd
Huizhandao north side of the oil Research Institute
Renqiu 062552 Hebei province PR China
TEL:+86-317-272-5966
E-mail:cpnc.zhonghao@hotmail.com

Emergency telephone number

International emergency number:
TEL:+86-317-272-5966

2. Hazards Identification

Label elements

Globally Harmonized System

Pictogram:



Signal Word:
Warning

Hazard Statement:
H319 Causes serious eye irritation.

Precautionary Statements (Prevention):
P280d Wear eye/face protection.
P264 Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P311 If eye irritation persists: Call a POISON CENTER or doctor/physician.

3. Composition/Information on Ingredients

Mixtures

Component	%	CAS No.
poyoxyethylene-poyoxy proplene	70	none
H2O	30	none

4. First-Aid Measures

Description of first aid measures

Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Wash thoroughly with soap and water.

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open.

On ingestion:
Rinse mouth and then drink plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms: Eye irritation

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray, dry powder, foam

Special hazards arising from the substance or mixture

harmful vapours

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Special protective equipment: Wear a self-contained breathing apparatus.

Further information:

Contaminated extinguishing water must be disposed of in accordance with official regulations.

6. Accidental Release Measures

High risk of slipping due to leakage/spillage of product.

Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Information regarding personal protective measures see, chapter 8.

Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material. Dispose of absorbed material in accordance with regulations.

Dispose of in accordance with national, state and local regulations.

Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

7. Handling and Storage

Precautions for safe handling

No special measures necessary provided product is used correctly.

Protection against fire and explosion:

No special precautions necessary.

Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Store protected against freezing. Keep at temperature not exceeding 40 °C. Keep container tightly closed.

Storage stability:

Storage temperature: 10 - 30 °C

Storage duration: 12 Months

Protect from temperatures below: 0 °C

Characteristics of the product are reversibly changed when falling below the limit temperature.

Protect from temperatures above: 40 °C

If transport time lasts more than 8 days the packed product must be protected against exceeding the indicated temperature.

8. Exposure Controls/Personal Protection

Control parameters

Components with workplace control parameters

No occupational exposure limits known.

Exposure controls

Personal protective equipment

Respiratory protection:

Respiratory protection in case of vapour/aerosol release. Particle filter with medium efficiency for solid and liquid particles

Hand protection:

Chemical resistant protective gloves

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time):

e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:

Safety glasses with side-shields (frame goggles)

General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Form:	liquid
Colour:	yellowish
Odour:	product specific
pH value:	approx. 11 (measured with the undiluted substance)
solidification temperature:	-2 °C (1,013 hPa)
Boiling point:	approx. 100 °C (1,013 hPa)
Flash point:	> 100 °C
Ignition temperature:	> 200 °C
Vapour pressure:	approx. 23 mbar (20 °C)

Density: approx. 1.10 g/cm³
(23 °C)
Partitioning coefficient n-octanol/water (log K_{ow}):
not applicable
Viscosity, dynamic: approx. 50 mPa.s
(23 °C)

Other information

Miscibility with water:
miscible in all proportions
forms colloidal solution

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals: Corrosive effects to metal are not anticipated.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

No hazardous reactions when stored and handled according to instructions.

Conditions to avoid

Avoid extreme heat. See MSDS section 7 - Handling and storage.

Incompatible materials

Substances to avoid:
carbon steel (iron), light metals, strong bases, strong acids, mild steel, reactive chemicals

Hazardous decomposition products

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Experimental/calculated data:
LD₅₀ rat (oral): > 2,000 mg/kg

Irritation

Assessment of irritating effects:

Eye contact causes irritation. Not irritating to the skin.

Experimental/calculated data:

Skin corrosion/irritation rabbit: non-irritant (Draize test)

Serious eye damage/irritation cattle: no irreversible damage (BCOP)

12. Ecological Information

Toxicity

Aquatic invertebrates:
EC₅₀ (48 h) > 100 mg/l, *Daphnia magna*

Microorganisms/Effect on activated sludge:
EC₁₀ > 1,000 mg/l, activated sludge, domestic, adapted (DEV-L2)
Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

Persistence and degradability

Assessment biodegradation and elimination (H₂O):
The product can be virtually eliminated from water by abiotic processes e.g. adsorption onto activated sludge.

Elimination information:
70 - 80 % DOC reduction (24 h) (ISO 18749) (aerobic, activated sludge, domestic) Easily eliminated from water.

Bioaccumulative potential

Bioaccumulation potential:
Based on its structural properties, the polymer is not biologically available. Accumulation in organisms is not to be expected.

Mobility in soil (and other compartments if available)

Assessment transport between environmental compartments:
The substance will not evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is possible.

Results of PBT and vPvB assessment

According to Annex XIV of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria. Self classification

Additional information

Other ecotoxicological advice:
Do not release untreated into natural waters.

13. Disposal Considerations

Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:

Uncontaminated packaging can be re-used.

Packs that cannot be cleaned should be disposed of in the same manner as the contents.

14. Transport Information

Land transport

ADR

Not classified as a dangerous good under transport regulations

RID

Not classified as a dangerous good under transport regulations

Inland waterway transport

ADN

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

Chemical Safety Assessment

Chemical Safety Assessment not required



SAFETY DATA SHEET

Polyurethane Foam

SECTION 1. COMPANY IDENTIFICATION

1.1 Product name : HEX PU Foam
1.2 Chemical Classification : Polyurethane foam
1.3 Manufacturer/Supplier: : Hexacon Material co.,Ltd.
Address : 2/95 Bangna Complex Office Tower Floor 18th ,Debaratna Rd.,
Bangna Nua, Bangna, Bangkok 10260
: Tel +66 21736445 , +66 2173 6448 Fax: +66 2173 6478
1,4 Emergency Telephone Number : Tel +66 21736445 , +66 2173 6448 Fax: +66 2173 6478

Recommended use of the chemical and restrictions on use

Recommended use : Construction materials and additives

SECTION 2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Physical: Aerosols, category 1
Extremely flammable aerosol.

Health: Respiratory sensitization, category 1
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization, category 1
May cause an allergic skin reaction.
Carcinogenicity, category 2
Suspected of causing cancer
Specific Target Organ Toxicity - Repeated Exposure Category 2
May cause damage to organs through prolonged or repeated exposure
Specific target organ toxicity - single exposure, category 3
May cause respiratory irritation.
Acute toxicity, category 4
Harmful if inhaled.
Skin irritation, category 2
Causes skin irritation.
Eye irritation, category 2
Causes serious eye irritation.

Classification based on calculation method.

Environment: Not classified

Classification based on calculation method.

2.2. Label elements

Product identifier:

Hazard pictogram(s):

Signal word:

Hazard statement(s):

Precautionary statement(s):

Polyurethane Foam

Contains:

diphenylmethandiisocyanate, isomeres and homologues



Danger

H222 : Extremely flammable aerosol.

H229 : Pressurised container: May burst if heated.

H332 : Harmful if inhaled.

H315 : Causes skin irritation.

H319 : Causes serious eye irritation.

H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 : May cause an allergic skin reaction.

H351 : Suspected of causing cancer.

H335 : May cause respiratory irritation.

H373 : May cause damage to organs through prolonged or repeated exposure.

P102 : Keep out of reach of children.

P210 : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P211 : Do not spray on an open flame or other ignition source.

P251 : Do not pierce or burn, even after use.

P260 : Do not breathe dust/fume/gas/mist/vapours/spray.

P285 : In case of inadequate ventilation wear respiratory protection.

P304/341 : IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P342/311 : If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

P410/412 : Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Polyurethane Foam

P501-2 : Dispose of contents/container to an authorised waste collection point.

Supplemental Hazard information: Contains isocyanates. May produce an allergic reaction.
Restricted to professional users.

2.3. Other hazards No information available

SECTION 3: Composition

3.1. Substances

Not applicable.

3.2. Mixtures

Chemical name	Concentration (%w/w)
Diphenylmethane -4-4'-diisocyanate (MDI)	20
Polymeric MDI	25
Dimethylether	40
Butane	9
Propane	6

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Contact with eyes : If substance has got into eyes, immediately wash out with water for at least 15 minutes
Continue flushing with water until medical help arrives
Seek immediate medical attention

Contact with skin : Remove contaminated clothing immediately and drench affected skin with plenty of water. Then wash with soap and water
Seek immediate medical attention

Inhalation : Remove patient to fresh air
Persons who have inhaled substance may not exhibit symptoms immediately In case of unconsciousness place patient in stable side position.

Ingestion : If swallowed seek medical advice immediately and show this container or lab

Polyurethane Foam

4.2. Most important symptoms and effects, both acute and delayed

Inhalation : May cause sensitization by inhalation.
Vapours may be irritating to respiratory system and nasal passages.

Ingestion : May cause gastrointestinal disturbances

Symptoms : sore throat, abdominal pain, nausea, vomiting

Skin contact : Irritating to skin

May cause sensitisation by skin contact.

Eye contact : Irritating to eyes

Symptoms : redness and pain

4.3. Indication of any immediate medical attention and special treatment needed

General Advice : In case of accident or if you feel unwell, seek medical advice (show the label where possible)

If symptoms persist always call a doctor

Persons already sensitised to diisocyanates may develop allergic reactions when using this product.

Persons suffering from asthma, eczema or skin problems should avoid contact including dermal contact, with this product.

In case of repeated exposures, regular medical examination is advised

SECTION 5: Firefighting measures

5.1. Extinguishing media

water, foam, carbon dioxide or dry agent

5.2. Special hazards arising from the substance or mixture

Aerosols may explode if heated above 50°C

Forms hazardous decomposition products

nitrogen and carbon oxides

hydrogen cyanide

5.3. Advice for firefighters

Keep container(s) exposed to fire cool, by spraying with water

In case of fire, do not breathe fumes

Substance evolves toxic fumes, wear self-contained breathing apparatus

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Shut off all ignition sources

Ensure adequate ventilation

Polyurethane Foam

Evacuate the area

Wear suitable protective clothing including eye/face protection and gloves.

6.2. Environmental precautions

Do not allow to enter public sewers and watercourses

If polluted water reaches drainage systems or water courses,
immediately inform appropriate authorities

6.3. Methods and material for containment and cleaning up

Absorb spillage in suitable inert material

Place in appropriate container

6.4. Reference to other sections

For further information see section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Keep away from heat and sources of ignition

Take precautionary measures against static discharges

Equipment should be earthed

Use explosion-proof electrical/ventilating/lighting/.../equipment.

Use only non-sparking tools.

Do not breathe aerosols or vapours.

Ensure adequate ventilation

Avoid contact with skin and eyes.

Wash thoroughly after use

Wear protective gloves/protective clothing/eye protection/face protection.

7.2. Conditions for safe storage, including any incompatibilities

Pressurized container : protect from sunlight and do not expose to temperatures exceeding 50°C.
exceeding 50°C.

Keep in a cool, dry, well ventilated place

Keep out of reach of children.

7.3. Specific end use(s)

Sealants and Isolation

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Polyurethane Foam

Components	Long term exposure limit	Short term exposure limit	Note
Diphenylmethane -4-4'-diisocyanate	0.02 mg/m ³	0.07 mg/m ³	Sen
Dimethyl ether	400 ppm (766 mg/m ³)	500 ppm (958 mg/m ³)	
Butane	600 ppm (1450 mg/m ³)	750 ppm (1810 mg/m ³)	

Sen = Capable of causing occupational asthma.

8.2 Appropriate engineering controls

Wash hands before breaks, before using restroom facilities, and at the end of the work.

Wear personal protective equipment as specified in below section till material is hardened.

8.3 Personal protective equipment

Eye/ face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin/ body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Respiratory protection

Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.

Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Polyurethane Foam

SECTION 9: Physical and chemical properties

a) Form Aerosol	Aerosol
b) Odor	Milky white
c) Odor threshold	No data available
d) pH	Not applicable
e) Melting point/	No data available
f) Boiling point	No data available
g) Flash point	No data available
h) Burning time	No data available
i) Burning rate	No data available
j) Evaporation rate	No data available
k) Flammability (solid, gas)	No data available
l) Upper explosion limit	30 (vol.%)
m) Lower explosion limit	5 (vol.%)
n) Vapour pressure	No data available
o) Vapour density	No data available
p) Relative density	No data available
q) Density	17-22 kg/m ³
r) Solubility	Insoluble in water
s) Partition coefficient: n-octanol/ water	No data available
t) Auto-ignition temperature	No data available
u) Decomposition temperature	No data available
v) Viscosity, dynamic	No data available
w) Viscosity, kinematic	No data available

SECTION 10: Stability and reactivity

- 10.1. Reactivity
 - No hazardous reactions known if used for its intended purpose
- 10.2. Chemical stability
 - Stable
- 10.3. Possibility of hazardous reactions
 - No hazardous reactions known if used for its intended purpose
- 10.4. Conditions to avoid
 - Avoid overheating
- 10.5. Incompatible materials
 - Strong oxidising agent

Polyurethane Foam

- 10.6. Hazardous decomposition products
 - CO₂, CO

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on the likely routes of exposure

Inhalation	: May give off gas, vapor or dust that is irritating to respiratory system.
Skin contact	: Causes skin irritation.
Eye contact	: Causes eye irritation.
Ingestion	: Causes ingestion discomfort.

11.2 Symptoms related to physical, chemical, and toxicological characteristics

Inhalation	: Harmful by inhalation.
Skin contact	: May cause reddening.
Eye contact	: Cause burning sensation and tearing.
Ingestion	: May cause discomfort.

11.3 Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure/ long term exposure

Potential immediate effects Not data available.

Potential delayed effects

Contains 4,4'-methylenediphenyl diisocyanate, which is suspected of causing cancer. Prolonged or repeated skin contact can cause an allergic eczema. Symptoms are itching, smaller spots and blisters. A severe reaction can cause the skin to swell and ooze.

May cause damage to organs.

Potential chronic health effects Not available.

Hazardous ingredient	method	
dimethyl ether	LC50 inhal.rat	309 mg/l
tris (2-chloro-1-methylethyl)-phosphate	LD50 oral rat	> 2000 mg/kg
	LC50 inhal.rat	7 mg/l
diphenylmethandiisocyanate, isomers and homologues	LD50 oral rat	> 10000 mg/kg
	LC50 inhal.rat	0.493 mg/l
	LD50 derm.rabit	> 10000 mg/kg

May cause damage to organs through prolonged or repeated exposure .

Limited evidence of a carcinogenic effect

SECTION 12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

Acute aquatic toxicity Not available.

12.2 Persistence and degradability Not available.

Polyurethane Foam

- 12.3 Bioaccumulative potential
- Not available.
- 12.4 Mobility in soil
- Not data available.
- 12.5 Other adverse effects
- No known significant effects or critical hazards.

SECTION 13. DISPOSAL CONSIDERATIONS

The product should be treated as dangerous waste. Contaminated packaging should be disposed of via the local waste-removal scheme.

SECTION 14. TRANSPORT INFORMATION

The product is included in the regulation of dangerous goods.

	IATA	IMDG	RID/ADR
Proper shipping name	Aerosols, flammable		
Hazard class	2.1	2.1	2.1
UN number	UN1950	UN1950	UN1950
Packing group	-	-	-

SECTION 15. REGULATORY INFORMATION

Chemical safety assessment has not been performed.

SECTION 16. OTHER INFORMATION

For Industrial Only

This materials safety data sheet is offered solely for your information, consideration and investigation. The data described in this MSDS consist of data on literature, our acquisitional data and analogical inference by data of similar chemical substance or product. Applied DB Public Company Limited provides no warranties; either expresses or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.

化学品安全技术说明书（MSDS）

第 1 部分 - 化学品及企业标识

产品名称： 超细碳酸钙
型号： QS-2
制造商： 河南海洋化工科技股份有限公司
地址： 河南省新密市城关镇翟沟村
邮编： 452370
电话： 0371-63125777
联系人： 郑树坤
电话： 0371-63125777
手机： +86 18135698989
邮箱： henanhaiyang168@163.com

第 2 部分 - 危险性概述

GHS-分类：GHS 分类根据化学品分类和标签系列规范（GB30000.2-29），该产品本品不是危险物质或混合物。危险性类别：

第 3 部分 - 成分/组成信息

名称	CAS NO.	含量%
碳酸钙	471-34-1	机密

第 4 部分 - 急救措施

皮肤接触：脱去污染衣物，以肥皂水及清水彻底冲洗皮肤。如发生皮肤刺激：求医/就诊。
眼睛接触：提起眼睑，用大量清水冲洗，如戴隐形眼镜并可方便地取出，取出隐形眼镜。继续冲洗。如发生刺激症状，立即就医。
吸入： 离开暴露现场，以呼吸新鲜空气，保持呼吸道通畅。如果感觉不适，就医。
食入： 用水漱口。尽可能大量喝水，并立即就医。

第 5 部分 - 消防措施

适合的灭火剂： 用水雾、干粉、泡沫或二氧化碳灭火剂灭火。
危险分解产物： 无
消防员专用防护设备： 消防队员必须穿戴防火防护装备。佩戴自给式呼吸器。

第 6 部分 - 泄漏应急处理

关于个人防护设备的选择指南，见安全技术说明书的第 8 章。关于处置信息， 请参阅第 13 章。
请遵从所有适用的地方及国际法规。
个人防护措施，防护用具，紧急措施： 使用个人防护用品，见第八部分。避免直接接触泄露物。人员疏散到安全区域。

环境防范措施： 收容泄漏物，避免污染环境。防止泄漏物进入下水道、地表水和地下水。
泄漏化学品的收容、清除方法及所使用的处置材料：
少量泄漏： 尽可能将泄漏物体收集在可密闭的容器中。用沙土、活性炭或其它惰性材料吸收，并转移至安全场所。禁止冲入下水道。
大量泄漏： 构筑围堤或挖坑收容。封闭排水管道。用泡沫覆盖，抑制蒸发。用防爆泵转移至槽车或专用收集器内，回收或运至废物处理场所处置。

第 7 部分 - 操作处置与储存

处理：避免直接接触皮肤和眼睛。
使用适当的防护设备。
操作和存储时远离食品，饮料，烟等。
在处理产品时，不要在现场吃饭，喝酒，吸烟。
操作后进食、饮水和抽烟前用清水和肥皂洗手。
储存： 储存于阴凉、干燥、通风库房内。远离火种、热源。应与强氧化物，强酸，强碱等分开存放。储存区配备相应品种和数量的消防器材、泄露应急处理设备和合适的收容材料。

第 8 部分 - 接触控制和个体防护

职业接触限值： 无 GBZ 2.1-2007 所规定的在工作场所需要监控的限制成分。
工程控制： 有通风系统和设备。提供安全淋浴和洗眼装置。
呼吸防护： 空气中浓度超标时，佩戴过滤式防毒面具（半面罩）。紧急事态抢救或撤离时，应该佩戴携气式呼吸器。
眼睛防护： 必要时，戴化学安全防护眼镜。
皮肤及身体防护： 穿一般作业防护服。
手部防护： 戴一般作业防护套。
其他防护： 处理此物后，用水和肥皂彻底洗手，脸。

第 9 部分 - 理化特性

外观与性状： 无臭、无味的白色粉末或颗粒。
熔点(℃)： 825
溶解性： 不溶于水，溶于酸。
相对密度(水=1)： 2.70-2.95
主要用途：用于制水泥、陶瓷、石灰、钙盐、牙膏、染料、颜料、矿泉水、人造石、油灰、中和剂、催化剂、填料、医药品等。

第 10 部分 – 稳定性和反应性

稳定性： 正常情况下稳定。

禁忌物： 强氧化物，强酸，强碱。

避免接触的条件： 静电放电、热、潮湿等。

分解产物： 正常情况下不会产生危害的分解产物。

聚合危害： 不会发生。

第 11 部分 – 毒理学资料

无资料

第 12 部分 – 生态学资料

无资料

第 13 部分 – 废弃处置

废弃处置方法： 废弃处理方法尽可能回收。大量废弃处置前应参阅国家、地方以及当地环保部门的有关法规。

废弃注意事项： 废弃处理的设施、场所，必须符合国家职业安全卫生和环境保护标准。

第 14 部分 – 运输信息

UN 号： 不属于危险品货物。

UN 专用运输名： 不属于危险品货物。

运输危险等级： 不属于危险品货物。

包装等级： 不属于危险品货物。

危害环境： 无

运输注意事项： 起运时包装要完整，装载应稳妥。运输过程中要确保包装不泄漏、不倒塌、不坠落、不损坏。严禁与氧化剂、食用化学品等混装混运。运输途中应防曝晒、雨淋，防高温。车辆运输完毕应进行彻底清扫。

特殊预防措施： 无

第 15 部分 – 法规信息

专门对此物质或混合物的安全，健康和环境的规章 / 法规

无资料。

化学品安全评估

还没有对该产品进行化学安全评估。

第 16 部分 – 附加信息

MSDS 制表日期：2017 年 10 月 25 日

该 MSDS 基于我们能收集到的信息编制而成，然而，关于数据和对危害和毒性的评估不作保证。使用前，请调查危害和毒性信息，应该优先考虑使用该产品的组织、地区和国家的法律法规。考虑到安全问题，产品应该购买后立即使用。一些新信息或修正会后续加上。如果该产品在远超出保质期时间使用或您有任何问题，请和我们联系。所陈述的警告仅仅适用于正常使用情况。如果是特殊使用情况，在普通安全措施外必须给予足够小心。应该注意到所有化学品都具有“未知的危害和毒性”，在不同使用条件、储存条件下会差异很大。该产品从开封到储存到废弃整个过程须由熟悉专业知识、有经验的操作人员使用或在专家指导下使用。基于每位使用者的个人责任必须建立安全的使用条件。

MATERIAL SAFETY DATA SHEET (MSDS)

Section 1 – Chemical Product and Company Identification

Product name: Superfine calcium carbonate
Type: QS-2
Manufacturer: Henan Ocean Chemical Technology Co.,Ltd.
Address: Zhaigou Village, Chengguan Town,Xinmi City,Henan Province,China
Post Code: 452370
Tel: 0371-63125777
Contact: Zheng shukun
Tel: 0371-63125777
Mobile phone: +86 18135698989
Email: henanhaiyang168@163.com

Section 2 – Hazards Identification

GHS-Classification: GHS classification According to the chemical classification and label series specification (GB30000.2-29), this product is not a hazardous substance or mixture.

Section 3 – Composition/Information on Ingredient

Name	CAS NO.	Content (%)
Calcium carbonate	471-34-1	Trade secret

Section 4 – First Aid Measures

Skin contact: Remove immediately any soiled clothing. Wash Skin with plenty of water and soap.If irritation occurs and persists, contact a doctor.

Eyes contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, continue rinsing. If irritation occurs and persists, contact a doctor immediately.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Contact a physician if discomfort.

Ingestion: Ingestion is unlikely under normal conditions. If ingested, rinse mouth with water. Drink enough water.Get medical aid immediately.

Section 5 – Fire Fighting Measures

Suitable Extinguishing Media: Water mist, dry powder, foam or carbon dioxide fire extinguishing agent.

Special hazards arising from the chemical: None

Special protectiveequipment for firefighters: Firefighters must wear fire resistant protective equipment. Wear self-contained breathing apparatus.

Section 6 – Accidental Release Measures

For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

Personal precautions, protective equipment and emergency procedures:

Use suitable personal protective equipment, see section 8. Avoid direct contact with spillage.

Evacuate personnel to safe areas.

Environmental precautions: Contain leakage to avoid environmental pollution. Prevent leakage from entering sewers, surface water and groundwater.

Methods and materials for containment and cleaning up:

Small amount of leakage: Collect leakage in sealable containers as much as possible.

Absorb with sand, activated carbon or other inert materials and transfer to a safe place. It is forbidden to rush into the sewer.

Large amount of leakage: constructing dikes or digging pits to contain. Close the drainage pipe. Cover with foam to suppress evaporation. Transfer to tank truck with explosion-proof pump or in a special collector, recycle or transport to waste disposal site for disposal.

Section 7 – Handling and Storage

Handling:Use personal protective equipment.

Do not handle or store near food and beverages or smoking materials.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling, before eating, drinking and smoking.

Storage: Store in a cool, dry and ventilated warehouse. Keep away from fire and heat sources.

It should be stored separately from strong oxides, strong acids, strong bases, etc.

The storage area is equipped with corresponding types and quantities of fire-fighting equipment, leakage emergency treatment equipment, and suitable containment materials.

Section 8 – Exposure Controls, Personal Protection

Occupational exposure limits: None.

Engineering control: There are ventilation systems and equipment. Provide safety showers and eyewashes.

Respiratory protection: When the concentration in the air exceeds the standard, wear a filtering gas mask (half mask). During emergency rescue or

evacuation, a breathing apparatus should be worn.
Eye protection: Wear chemical safety glasses when necessary.
Skin and body protection: Wear general protective clothing.
Hand protection: Wear general operation protective sleeves.
Other protection: After handling this object, wash hands and face thoroughly with water and soap.

Section 9 – Physical and Chemical Properties

Appearance and properties: odorless, tasteless white powder or granules.
Melting point (°C): 825
Solubility: Insoluble in water, soluble in acid.
Relative density (water = 1): 2.70-2.95
Main uses: Used for making cement, ceramics, lime, calcium salt, toothpaste, dye, pigment, mineral water, artificial stone, putty, neutralizer, catalyst, filler, medicine, etc.

Section 10 – Stability and Reactivity

Stability: Stable under normal temperature and pressure.
Contraindications: Strong oxides, strong acids, strong bases.
Conditions to avoid contact: electrostatic discharge, heat, humidity, etc.
Hazardous Decomposition Products: No known hazardous decomposition products under normal condition.
Hazardous Polymerization: Will not occur.

Section 11 – Toxicological Information

No data available

Section 12 – Ecological Information

No data available

Section 13 – Disposal Considerations

Waste disposal method: The waste disposal method should be recycled as much as possible.
Before disposal of large amount of waste, you should refer to the relevant regulations of the national, local and local environmental protection departments.
Precautions for waste disposal: The facilities and places for waste disposal must comply with

the national occupational safety and health and environmental protection standards.

Section 14 – Transport Information

UN Number: Not regulated as dangerous goods.
UN proper shipping name: Not regulated as dangerous goods.
Transport hazard class(es): Not regulated as dangerous goods.
Packaging group: Not regulated as dangerous goods.
Environmental hazards: No.
Transportation precautions: The packaging should be complete at the time of shipment and the loading should be secure. During transportation, make sure that the package does not leak, collapse, fall or damage. It is strictly forbidden to mix and transport with oxidants and edible chemicals. It should be protected from exposure, rain and high temperature during transportation. The vehicle should be thoroughly cleaned after transportation.
Special precautions for user: No.

Section 15 – Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture: No information available.
Chemical Safety Assessment: For this product a chemical safety assessment was not carried out.

Section 16 – Additional Information

MSDS Creation Date: 25th Oct. 2017
This MSDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. Products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

化学品安全技术说明书（MSDS）

第 1 部分 - 化学品及企业标识

产品名称: 重晶石粉
型号: BaSO4
制造商: 河南海洋化工科技股份有限公司
地址: 河南省新密市城关镇翟沟村
邮编: 452370
电话: 0371-63125777
联系人: 郑树坤
电话: 0371-63125777
手机: +86 18135698989
邮箱: henanhaiyang168@163.com

第 2 部分 - 危险性概述

GHS-分类: GHS 分类根据化学品分类和标签系列规范（GB30000.2-29），该产品本品不是危险物质或混合物。

第 3 部分 - 成分/组成信息

名称	CAS NO.	含量%
硫酸钡	7727-43-47	机密

第 4 部分 - 急救措施

皮肤接触: 脱去污染衣物，以肥皂水及清水彻底冲洗皮肤。如发生皮肤刺激: 求医/就诊。
眼睛接触: 提起眼睑，用大量清水冲洗，如戴隐形眼镜并可方便地取出，取出隐形眼镜。继续冲洗。如发生刺激症状，立即就医。
吸入: 离开暴露现场，以呼吸新鲜空气，保持呼吸道通畅。如果感觉不适，就医。
食入: 用水漱口。尽可能大量喝水，并立即就医。

第 5 部分 - 消防措施

适合的灭火剂: 用抗乙醇泡沫,干粉或二氧化碳灭火。
危险分解产物: 受高热分解产生氧化硫。
消防员专用防护设备: 消防队员必须穿戴防火防护装备。佩戴自给式呼吸器。

第 6 部分 - 泄漏应急处理

关于个人防护设备的选择指南，见安全技术说明书的第 8 章。关于处置信息， 请参阅第 13 章。
请遵从所有适用的地方及国际法规。
个人防护措施, 防护用具, 紧急措施: 使用个人防护用品，见第八部分。避免直接接触泄露物。人员疏散到安全区域。

环境防范措施 : 收容泄露物，避免污染环境。
泄露化学品的收容、清除方法及所使用的处置材料: 用塑料布覆盖，收集于干燥、洁净的容器中，转移至安全场所。若大量泄漏，根据当地规定处理。

第 7 部分 - 操作处置与储存

处理: 避免直接接触皮肤和眼睛。
使用适当的防护设备。
操作和存储时远离食品，饮料，烟等。
在处理产品时, 不要在现场吃饭，喝酒，吸烟。
操作后进食、饮水和抽烟前用清水和肥皂洗手。
储存: 储存于阴凉、干燥、通风库房内。远离火种、热源。应与易燃物、还原剂等分开存放。储存区配备相应品种和数量的消防器材、泄露应急处理设备和合适的收容材料。

第 8 部分 - 接触控制和个体防护

职业接触限值: 无 GBZ 2.1-2007 所规定的在工作场所需要监控的限制成分。
工程控制: 有通风系统和设备。提供安全淋浴和洗眼装置。
呼吸防护: 戴上呼吸保护装置。
眼睛防护: 必要时，戴化学安全防护眼镜。
皮肤及身体防护: 穿一般作业防护服。
手部防护: 戴一般作业防护套。
其他防护: 处理此物后，用水和肥皂彻底洗手，脸。

第 9 部分 - 理化特性

外观与性状: 灰白色粉末。
熔点(℃): 1580
溶解性: 不溶于水，不溶于酸。
主要用途: 用作白色颜料、纸和橡胶等的填充剂、钻井泥浆加重剂等。

第 10 部分 - 稳定性和反应性

稳定性： 正常情况下稳定。

禁忌物： 磷、铝。

避免接触的条件： 极端高热，明火。

分解产物： 正常情况下不会产生危害的分解产物。

聚合危害： 不会发生。

第 11 部分 – 毒理学资料

无资料

第 12 部分 – 生态学资料

无资料

第 13 部分 – 废弃处置

废弃处置方法： 废弃处理方法尽可能回收。大量废弃处置前应参阅国家、地方以及当地环保部门的有关法规。

废弃注意事项： 废弃处理的设施、场所，必须符合国家职业安全卫生和环境保护标准。

第 14 部分 – 运输信息

UN 号： 不属于危险品货物。

UN 专用运输名： 不属于危险品货物。

运输危险等级： 不属于危险品货物。

包装等级： 不属于危险品货物。

危害环境： 无

运输注意事项： 起运时包装要完整，装载应稳妥。运输过程中要确保包装不泄漏、不倒塌、不坠落、不损坏。严禁与易燃物或可燃物、还原剂等混装混运。运输途中应防晒、雨淋，防高温。车辆运输完毕应进行彻底清扫。

特殊预防措施： 无

第 15 部分 – 法规信息

专门对此物质或混合物的安全，健康和环境的规章 / 法规

无资料。

化学品安全评估

还没有对该产品进行化学安全评估。

第 16 部分 – 附加信息

MSDS 制表日期： 2017 年 10 月 25 日

该 MSDS 基于我们能收集到的信息编制而成，然而，关于数据和对危害和毒性的评估不作保证。使用前，请调查危害和毒性信息，应该优先考虑使用该产品的组织、地区和国家的法律法规。

考虑到安全问题，产品应该购买后立即使用。一些新信息或修正会后续加上。如果该产品在远超出保质期时间使用或您有任何问题，请和我们联系。所陈述的警告仅仅适用于正常使用情况。如果是特殊使用情况，在普通安全措施外必须给予足够小心。应该注意到所有化学品都具有“未知的危害和毒性”，在不同使用条件、储存条件下会差异很大。该产品从开封到储存到废弃整个过程须由熟悉专业知识、有经验的操作人员使用或在专家指导下使用。基于每位使用者的个人责任必须建立安全的使用条件。

MATERIAL SAFETY DATA SHEET (MSDS)

Section 1 – Chemical Product and Company Identification

Product name: Barite powder
Type: BaSO₄
Manufacturer: Henan Ocean Chemical Technology Co.,Ltd.
Address: Zhaigou Village, Chengguan Town,Xinmi City,Henan Province,China
Post Code: 452370
Tel: 0371-63125777
Contact: Zheng shukun
Tel: 0371-63125777
Mobile phone: +86 18135698989
Email: henanhaiyang168@163.com

Section 2 – Hazards Identification

GHS-Classification: GHS classification According to the chemical classification and label series specification (GB30000.2-29), this product is not a hazardous substance or mixture.

Section 3 – Composition/Information on Ingredient

Name	CAS NO.	Content (%)
Calcium carbonate	471-34-1	Trade secret

Section 4 – First Aid Measures

Skin contact: Remove immediately any soiled clothing. Wash Skin with plenty of water and soap.If irritation occurs and persists, contact a doctor.

Eyes contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, continue rinsing. If irritation occurs and persists, contact a doctor immediately.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Contact a physician if discomfort.

Ingestion: Ingestion is unlikely under normal conditions. If ingested, rinse mouth with water. Drink enough water.Get medical aid immediately.

Section 5 – Fire Fighting Measures

Suitable Extinguishing Media: Alcohol-resistant foam, dry powder or carbon dioxide to extinguish the fire.

Special hazards arising from the chemical: Decomposition by high heat produces sulfur chloride.

Special protectiveequipment for firefighters: Firefighters must wear fire resistant protective equipment. Wear self-contained breathing apparatus.

Section 6 – Accidental Release Measures

For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

Personal precautions, protective equipment and emergency procedures:

Use suitable personal protective equipment, see section 8. Avoid direct contact with spillage. Evacuate personnel to safe areas.

Environmental precautions:Contain leakage to avoid environmental pollution.

Methods and materials for containment and cleaning up:

Cover them with plastic cloth, collect them in dry and clean containers and transfer them to safe places. If there is a large amount of leakage, deal with it according to local regulations.

Section 7 – Handling and Storage

Handling:Use personal protective equipment.

Do not handle or store near food and beverages or smoking materials.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handing, before eating, drinking and smoking.

Storage: Store in a cool, dry and ventilated warehouse. Keep away from fire and heat sources.

It should be stored separately from flammable materials and reducing agents.The storage area is equipped with corresponding types and quantities of fire-fighting equipment, leakage emergency treatment equipment, and suitable containment materials.

Section 8 – Exposure Controls, Personal Protection

Occupational exposure limits: None.

Engineering control: There are ventilation systems and equipment. Provide safety showers and eyewashes.

Respiratory protection: Wear respiratory protection.

Eye protection: Wear chemical safety glasses when necessary.

Skin and body protection: Wear general protective clothing.

Hand protection: Wear general operation protective sleeves.

Other protection: After handling this object, wash hands and face thoroughly with

water and soap.

Section 9 – Physical and Chemical Properties

Appearance and properties: Gray white powder.

Melting point (°C): 1580

Solubility: Insoluble in water, soluble in acid.

Relative density (water = 1): 2.70-2.95

Main uses: Used as filler of white pigment, paper and rubber, and weighting agent of drilling mud , etc.

Section 10 – Stability and Reactivity

Stability: Stable under normal temperature and pressure.

Contraindications: Phosphorus and aluminum.

Conditions to avoid contact: Extremely high heat, open fire.

Hazardous Decomposition Products: No known hazardous decomposition products under normal condition.

Hazardous Polymerization: Will not occur.

Section 11 – Toxicological Information

No data available

Section 12 – Ecological Information

No data available

Section 13 – Disposal Considerations

Waste disposal method: The waste disposal method should be recycled as much as possible. Before disposal of large amount of waste, you should refer to the relevant regulations of the national, local and local environmental protection departments.

Precautions for waste disposal: The facilities and places for waste disposal must comply with the national occupational safety and health and environmental protection standards.

Section 14 – Transport Information

UN Number: Not regulated as dangerous goods.

UN proper shipping name: Not regulated as dangerous goods.

Transport hazard class(es): Not regulated as dangerous goods.

Packaging group: Not regulated as dangerous goods.

Environmental hazards: No.

Transportation precautions: The packaging should be complete at the time of shipment and the loading should be secure. During transportation, make sure that the package does not leak, collapse, fall or damage. It is strictly forbidden to mix and transport with nflammables, combustibles and reducing agents. It should be protected from exposure, rain and high temperature during transportation. The vehicle should be thoroughly cleaned after transportation.

Special precautions for user: No.

Section 15 – Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture: No information available.

Chemical Safety Assessment: For this product a chemical safety assessment was not carried out.

Section 16 – Additional Information

MSDS Creation Date: 25th Oct. 2017

This MSDS was prepared sincerely on the basis of the information we could obtained, however, any warranty shall not be given regarding the data contained and the assessment of hazards and toxicity. Prior to use, please investigate not only the hazards and toxicity information but also the laws and regulations of the organization, area and country where the products are to be used, which shall be given the first priority. Products are supposed to be used promptly after purchase in consideration of safety. Some new information or amendments may be added afterwards. If the products are to be used far behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.