

*Chemtech*

Oil Drilling Chemicals



CHEMTECH B.V.

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**Re: Oil Drilling Chemicals**

Dear Sir, Madam,

Please herewith find the Technical Data Sheets and some Standard Specification Sheets of our main products used in the Oil Drilling Industry. The enclosed is just a summary. We hold a far larger production programme than listed.

Generally speaking, we can produce oil-drilling chemicals as per special request in formulation of drilling fluids of the customers. Our capacity for each product required is more than 10,000 mt/year for each item.

Chemtech is considered one of the innovation leaders in the production of Cellulose and Starch and one of the large manufacturers of Sodium Carboxymethyl Cellulose (CMC), Polyanionic Cellulose (PAC) and Carboxymethyl Starch (CMS).

Our products are derived from natural, renewable raw materials, and Chemtech strives to provide these products with minimal modification and environmental protection. These products serve many functions, including viscosity modification, thickening, suspension, stabilization and gelation, widely used in food, oil and gas drilling, detergent ,buildings, ceramic, textile and mining separation.

We hope this information will be helpful to you. If you have questions regarding the products indicated or if you are looking for a product which is not indicated on this list, then please send a message to **m.plusquin@chemtechbv.com** or **info@chemtechbv.com** or call us on any of the numbers mentioned below and we will provide you with the required data immediately.

We are looking forward to receiving your news, and remain,

Yours sincerely,

CHEMTECH B.V.  
Matthijs Plusquin / Managing Director

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**STANDARD SPECIFICATION SHEET**  
**SULFOLANE**

**Chemtech Product Code 40**

<b><u>Properties</u></b>	<b><u>Specifications</u></b>
I Aqueous Grade	
(1) Purity	: 97.0 ~ 98.0%
(2) Water	: 2.0 ~ 3.0%
II Anhydrous Grade	
(1) Purity	: 99.5% min.
(2) Water	: 0.3% max.
III Super Grade	
(1) Purity	: 99.9% min.
(2) High & low boiling parts	: 0.005% max.
(3) Water	: 0.05% max.
Boiling point	: 285°C
Melting point	: 27°C
Flash point (Cleveland open-cup tester)	: 174°C
Refractive index	: 1.481 ( $n_D^{30}$ )
Dielectric constant	: 44

**Standard packaging**

20kg can, 250kg steel drum, 10.000kg tank lorry or 20.000kg tank container.

**Additional Information**

Cas no.	: 126-33-0
REACH	: pre-registered.
Molecular formula	: C <sub>4</sub> H <sub>8</sub> SO <sub>2</sub>

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**STANDARD SPECIFICATION SHEET**

**POTASSIUM ACETATE**

**Chemtech Product Code 40**

<b>Formula:</b>	CH <sub>3</sub> COOK		
<b>Synonyms:</b>			
<b>CAS No:</b>	127-08-2		
<b>EINECS No:</b>	204-822-2		
<b>Specification:</b>		Industrial grade	Food Grade
	Purity, %:	99.0-100.5	90.0-100.5
	PH:	7.5-8.5	7.5-8.5
	Chlorides, %:	0.05	0.01
		max.	max.
	Fe, %:	0.001 max.	0.001 max.
	Loss on heating, %:	1.0 max.	1.0 max.
	As, %:	0.0004 max.	0.0004 max.
		0.01	
	Sulfate, %	max.	//
	Mg, %	0.01 max.	//
	Heavy metal (Pb), %	//	0.0001 max.
	Al, %	//	0.0004 max.
	Hg, %	//	0.0001 max.
	Na, %	//	0.5% max.
<b>Use:</b>	<p>Potassium Acetate is used for the manufacture of antibiotics, potassium penicillinate, and in solutions for haemodialysis and peritoneal dialysis. In addition, it can be used as a textile conditioner, a polymerization catalyst and as a catalyst in the production of polyurethane foams and carbon black. It is also used as a dehydrating agent, ad runway de-icing fluid or oil-drilling fluid additive. It is also used in food and feed industry.</p>		
<b>Packing:</b>	25kg bag. 1 Fcl=25mt/22mt ( loose/palletized)		

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**STANDARD SPECIFICATION SHEET**

**POTASSIUM FORMATE**

**Chemtech Product Code 40**

<b>Formula:</b> <b>Synonyms:</b>  <b>CAS No:</b> <b>EINECS No:</b>	HCOOK  590-29-4 209-677-9
<b>Specification:</b>	<p>Purity, %: 97 min. Moisture, %: 0.50 max. KOH, %: 0.50 max. KCL, %: 0.20 max. Fe, ppm: 10 max. Ca, ppm: 10 max. Mg, ppm: 10 max.</p>
<b>Use:</b>	<p>As a high performance drilling fluids, completion fluids, workover fluids are widely used in oil industry, which is an environmentally friendly alternatives to chlorides, offer high density to brines and extends thermal stability. As camouflage acid in chrome tanning method in leather industry;</p> <p>As a reducing agent in rinting and dyeing industry;</p> <p>Can also be used as a grout early strength agent and used in mining, electroplating;</p> <p>Used in snow melt industry.</p>
<b>Packing:</b>	25kg bags for min. 97%; 320kg drum/1600kg IBC for min. 74%

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## **EXPLANATION SHEET**

### **CARBOXYMETHYLCELLULOSE SODIUM (CMC FOR OIL DRILLING)**

#### **Chemtech Product Code 40**

Slurry with CMC would form thin but hard filter cake with low permeability, reducing water loss. Adding CMC into slurry will endow the drill with low initial gel strength, making the slurry give off the gas inside and abandoning the waste into the slurry pit. Same as other suspending dispersion, the drill slurry has an existing period which will be stable and extended after adding CMC.

Slurry with CMC is seldom affected by the bacterium and requires no high PH value or corrosion resistant. Slurry with CMC has excellent stability and will still reduce the filtration loss under 150°C or above.

For CMC of LV and HV, Chemtech is one of the main suppliers to Drilling companies.

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**TECHNICAL DATA SHEET**  
**CARBOXYMETHYLCELLULOSE SODIUM (CMC FOR OIL DRILLING)**  
**Chemtech Product Code 40**

<p><b>Formula:</b></p> <p><b>Synonyms:</b></p> <p><b>CAS No:</b></p> <p><b>EINECS No:</b></p>	<p><math>C_8H_{16}NaO_8</math></p> <p>Carboxymethylcellulose sodium</p> <p>9004-32-4;117385-93-0;12624-09-8</p>										
<p><b>Specification:</b></p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Viscosity, 1% solution</td> <td style="text-align: right;">300-500 MPa. S</td> </tr> <tr> <td style="padding-left: 40px;">purity, %</td> <td style="text-align: right;">min. 80</td> </tr> <tr> <td style="padding-left: 40px;">PH</td> <td style="text-align: right;">6.0-8.0</td> </tr> <tr> <td style="padding-left: 40px;">Degree of substitute</td> <td style="text-align: right;">0.7-0.9</td> </tr> <tr> <td style="padding-left: 40px;">moisture, %</td> <td style="text-align: right;">max. 10</td> </tr> </table> <p>NOTE: The parameters can be adjusted as per requirements.</p>	Viscosity, 1% solution	300-500 MPa. S	purity, %	min. 80	PH	6.0-8.0	Degree of substitute	0.7-0.9	moisture, %	max. 10
Viscosity, 1% solution	300-500 MPa. S										
purity, %	min. 80										
PH	6.0-8.0										
Degree of substitute	0.7-0.9										
moisture, %	max. 10										
<p><b>Use:</b></p>	<p>CMC Oil Drilling Grade used in fracturing fluid ,drilling fluid and well cementing fluid as fluid loss controller and tackifier. CMC can protect the shaft wall and prevent mud loss thus enhance recovery efficiency. CMC has the following characteristics:</p> <ul style="list-style-type: none"> <li>• Excellent water retention even at low concentration.</li> <li>• Excellent thickening effect.</li> <li>• Good resistance to salt and temperature change.</li> <li>• Imparts excellent rheological property.</li> </ul>										
<p><b>Packing:</b></p>	<p>750kg bags, 1 Fcl=15mt</p>										

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**EXPLANATION SHEET**  
**CARBOXYMETHYL STARCH SODIUM (CMS)**  
**Chemtech Product Code 40**

CMS is a kind of modified starch with carboxymethyl etherification, performance is better than that of carboxymethyl cellulose (CMC) with competitive price. It is the best products to replace the CMC.

CMS has a good performance in adhesion, thickening, water emulsion, suspension, dispersion, etc. As mud stabilizers in oil drilling and water retention agent, it could reduce the water loss, improve the stability of the coalescence of clay particles in drilling fluid role.

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**TECHNICAL DATA SHEET**  
**CARBOXYMETHYL STARCH SODIUM (CMS)**  
**Chemtech Product Code 40**

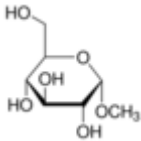
<b>Formula:</b> <b>Synonyms:</b>  <b>CAS No:</b> <b>EINECS No:</b>	Carboxymethyl Starch Sodium; CMS-Na  9063-38-1												
<b>Specification:</b>	<table><tr><td>Moisture, %</td><td>15.0 max.</td></tr><tr><td>NaCl, %</td><td>12.0 max.</td></tr><tr><td>Degree of Substitute</td><td>0.15 min.</td></tr><tr><td>PH</td><td>9.0±1.0</td></tr><tr><td>Filter loss</td><td>10 max.</td></tr><tr><td>Viscometer 600r/min</td><td>20 max.</td></tr></table> <p>NOTE: The parameters can be adjusted as per requirements.</p>	Moisture, %	15.0 max.	NaCl, %	12.0 max.	Degree of Substitute	0.15 min.	PH	9.0±1.0	Filter loss	10 max.	Viscometer 600r/min	20 max.
Moisture, %	15.0 max.												
NaCl, %	12.0 max.												
Degree of Substitute	0.15 min.												
PH	9.0±1.0												
Filter loss	10 max.												
Viscometer 600r/min	20 max.												
<b>Use:</b>	<p>CMS is an effective "economical" Fluid Loss Control agent for water-based drilling fluids. Increasing additions of CMS can cause an increase in desired viscosity. Use of CMS does not require any biocide treatment in normal drilling fluid operations. CMS is typically unaffected by normal solids concentrations and products a tough, slick filter cake, which promotes a reduction in friction and potentially increases drilling rates. CMS may be less effective in high levels of Mg and Ca ions and it is recommended that all "high hardness" be treated out prior to CMS addition.</p>												
<b>Packing:</b>	25kg bag.												

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**STANDARD SPECIFICATION SHEET**  
**MEG FOR OIL DRILLING**  
**Chemtech Product Code 40**

<p><b>Formula:</b></p> <p><b>Synonyms:</b></p> <p><b>CAS No:</b></p> <p><b>EINECS No:</b></p>	<p>C<sub>7</sub>H<sub>14</sub>O<sub>6</sub></p> <p>alpha-methylglucoside (AMG); methyl-alpha-d-glucoopyranoside (MEG)</p> <p>97-30-3</p> <p>202-571-3</p>						
<p><b>Specification:</b></p>	  <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding-right: 20px;">Content, %</td> <td>50 ± 1.0</td> </tr> <tr> <td style="padding-right: 20px;">Density</td> <td>1.24- 1.27</td> </tr> <tr> <td style="padding-right: 20px;">PH</td> <td>6.0-7.0</td> </tr> </table>	Content, %	50 ± 1.0	Density	1.24- 1.27	PH	6.0-7.0
Content, %	50 ± 1.0						
Density	1.24- 1.27						
PH	6.0-7.0						
<p><b>Use:</b></p>	<p>Used to produce drilling liquid in oil field as lubricant and inhibitor.          It has biological degradable character, non polluting to the environment.</p>						
<p><b>Packing:</b></p>	<p>250kg drum.</p>						

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**EXPLANATION SHEET**  
**POLYANIONIC CELLULOSE (PAC)**  
**Chemtech Product Code 40**

Our PAC products are high-tech products. As anionic cellulose ether, it features high purity, high replacement and well distribution and can be taken as thickener, rheology modifier and fluid loss agent. HV and LV PAC are indispensable products in slurry combination. The application experience of CNPC, CNOOC, Daqing Oilfield, Shengli Oilfield, oil mining enterprises in Middle East and Europe witnesses the excellent performance as well as stable and reliable quality.

High quality PAC is white flowing powder and the water solution is transparent viscous liquid. As water soluble polymer, it can be able to be thickener, rheology control agent, adhesive, stabilizer, protective glue, suspending agent and water retaining agent.

In the oil drilling industry, PAC is a good kind of slurry agent and fluid material, with high mud yield and excellent salt resistance. To fresh-water mud, seawater mud and saturated brine mud, PAC is an excellent filtration reducer ,superior to increase viscosity and high temperature resistance (150°C). Besides, it can formulate completion fluids with various densities .even there is more calcium chloride, it still can keep the completion fluid with certain viscosity and lower filtration.

Our HV and LV PAC products not only meet the standards of OCMA and API 13A, but also able to step over these standards if you have a special demand.

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**TECHNICAL DATA SHEET**  
**POLYANIONIC CELLULOSE (PAC)**  
**Chemtech Product Code 40**

<b>Formula:</b> <b>Synonyms:</b>  <b>CAS No:</b> <b>EINECS No:</b>	Polyanionic Cellulose  9004-32-4		
<b>Specification:</b>		PAC-HV	PAC-LV
	Purity, %	98 min.	96 min.
	PH	7.0-8.0	7.0-8.0
	Degree of substitute	0.90	0.90
		min.	min.
	Viscosity Brookfield	1500	50 max.
	1%	min.	
	NOTE: The parameters can be adjusted as per requirements.		
<b>Use:</b>	<p>PAC-HV is for water-based drilling fluids, which can effectively reduce the filtration rate of many water-based oil and gas drilling fluids and may also be used to increase and stabilize viscosity to improve hole cleaning and suspension properties in a wide variety of fluid environment.</p> <p>PAC-LV is for use in solids-laden, water-based drilling fluids, which can effectively reduces the filtration rate of many water-based drilling fluids, without causing significant increases in viscosity or gel strength.</p>		
<b>Packing:</b>	25kg bag.		

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