

Surfactants for Oilfield Chemicals

Lankem 



Summary Guide

www.lankemUK.com

About us

Our primary focus is surfactant chemistry and application. We pride ourselves on being able to provide true expertise and assistance to help the formulator develop new products and technologies. We have a dedicated laboratory facility aimed at analysing and matching products and we also provide technical support to assist customer queries. We see this as key to the growth of the business and as a company, we continually develop new products to meet customer demands.

Bespoke products

We offer a service to provide the customer with products that can be labelled in neutral markings. These products can either be re-brands or customer specific formulations. The packaged material will range from 25kg, 200kg, 1000kg IBC and bulk tanker.



Quality and the Environment

We view both quality and environmental compliance as essential components of the business. As expected we are a quality assured company with compliance in accordance with ISO9001 and with an excellent environmental profile, we have been certified to ISO14001. As a member of the Responsible Care programme, we are committed to managing the business both ethically and responsibly.

Our chemistries

All surfactants contain both a hydrophobic and a hydrophilic section, and as a combination of these two different characteristics within the molecule, many differing properties can be achieved. We have products that produce high or low foam. Some products offer excellent detergency and are used in cleaning formulations. We have surfactants that offer good emulsification of oils and monomers, in the case of emulsion polymerisation. We have some products that offer excellent wetting power and some that offer both wetting and dispersing properties. Products are available for each of the surfactant types, anionic, nonionic, cationic and amphoteric.



Research and Development

With a dedicated laboratory facility, we are able to develop new products to meet our customers changing demands. Research and development are important to Lankem and with our expertise in the chemistries of surfactants we are able to produce new and novel products. As part of our technical support, we are able to offer product matches and provide project development assistance to our customers.



Product Range

	Demulsifier	Emulsifier	Defoamer	Foaming agents	Corrosion inhibitor	Paraffin control	Asphaltene control	Scale control	Acidizing	Lubricity	Solvent	Wetting agent	Drilling Fluids	Cleaning	Dispersion	Cementing	Hydrotrope
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Alcohol and Phenol Ethoxylates

Lansurf AE33		✓												✓			
Lansurf AE35		✓											✓	✓			
Lansurf AE37		✓												✓			
Lansurf AE310W		✓										✓		✓			
Lansurf P4											✓						✓

Fatty Acid Alkanolamides

Lansurf CDE		✓		✓	✓					✓			✓	✓			
Lansurf CDE/G		✓		✓	✓					✓			✓	✓			

Amine Ethoxylates

Lansurf TA2		✓			✓										✓		
Lansurf TA15		✓			✓				✓	✓					✓		

Castor Oil Ethoxylates

Lansurf CO12		✓								✓			✓		✓		
Lansurf CO40		✓								✓			✓		✓		

EO/PO Copolymers

Lansurf DPE201	✓	✓	✓							✓					✓		
Lansurf DPE253	✓	✓	✓							✓					✓		
Lansurf GPE35	✓	✓	✓							✓					✓		

Sorbitan Esters

Lansurf SMO		✓			✓		✓			✓			✓				
Lansurf STO		✓			✓		✓			✓			✓				
Lansurf SMO81		✓			✓		✓			✓			✓				
Lansurf SMO80		✓			✓		✓			✓			✓				
Lansurf STO85		✓			✓		✓			✓			✓				

Product Range

	Demulsifier	Emulsifier	Defoamer	Foaming agents	Corrosion inhibitor	Paraffin control	Asphaltene control	Scale control	Acidizing	Lubricity	Solvent	Wetting agent	Drilling Fluids	Cleaning	Dispersion	Cementing	Hydrotrope
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Alkyl Benzene Sulfonic Acid Salts

Kemsurf CA		✓											✓		✓		
Kemsurf CA-EH		✓											✓		✓		
Kemsurf PWS		✓				✓	✓					✓		✓	✓		
Kemsurf SBE acid						✓	✓							✓			

Alkyl and Alkyl Ether Sulfates

Kemsurf ESD		✓		✓										✓		✓	
Kemsurf EM9		✓		✓										✓		✓	
Kemsurf DSA				✓												✓	
Lanspec OF32				✓												✓	
Lanspec OF56				✓												✓	
Lanspec OF65				✓												✓	

Alpha Olefin Sulfonate

Kemsurf OS38		✓		✓					✓					✓		✓	
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Phosphate Esters

Lanphos PA8		✓	✓		✓			✓									
Lanphos PE35		✓			✓								✓	✓			
Lanphos PE310		✓			✓									✓			
Lanphos PE73		✓			✓								✓	✓			
Lanphos TEP4														✓			✓
Lanphos TEP4K														✓			✓

Diethyl Sulfosuccinate

Kemsurf OT60	✓	✓										✓					
Kemsurf OT70-G	✓	✓										✓					

Product Range

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Amphoteric Surfactants

Lansurf CAO				✓					✓								
Lansurf CAPO				✓					✓								
Amphokem DCA				✓													
Amphokem CAB				✓	✓				✓			✓					
Amphokem CAPB				✓	✓				✓			✓					
Amphokem CAPB-conc				✓	✓							✓					
Amphokem CADP																	

Imidazolines

Lanspec OC100		✓			✓												
Lanspec OC200		✓			✓												

Fatty Alcohol Ethoxylates

The Lansurf AE range of fatty alcohol ethoxylates find application in a wide range of oilfield applications. They are a key component in the formulation of well bore and cutting cleaners and in general purpose detergents, they can also be used as components in corrosion inhibitors. Lansurf P4 is a versatile solvent that can help stabilize formulations and can increase the activity of a cleaning and stimulating fluids.

	Lansurf AE33	Lansurf AE35	Lansurf AE37	Lansurf AE310W	Lansurf P4
Description	C13 alcohol + 3 EO	C13 alcohol + 5 EO	C13 alcohol + 7 EO	C13 alcohol + 10 EO	Phenol + 4 EO
Appearance @ 25°C	Liquid	Liquid	Liquid	Liquid	Liquid
Density @ 20°C (g/cm ³)	0.93	0.96	0.98	1.01	1.12
Viscosity @ 20°C centipoise	50	80	100	80	64
HLB	9	10.5	12	13.5	-
Cloud point °C 10% in 25% BDG	36	60	70	-	-
Cloud point °C 1% aqueous	-	-	-	70	-
Cloud point °C 10% aqueous	-	-	-	-	67
pH 5% aqueous	6	6	7	6.5	7.5

Fatty Acid Alkanolamides

Lansurf CD range of fatty acid alkanolamides find application in the formulation of a range of oilfield chemicals including corrosion inhibitors, they are effective emulsifiers providing lubricity, foam boosters, detergents for a range of application such as bore hole and cuttings cleaners.

	Lansurf CDE	Lansurf CDE/G
Description	Coconut Diethanolamide	Coconut Diethanolamide
Appearance @ 25°C	Liquid	Liquid
Density @ 20°C (g/cm ³)	1.00	1.00
Viscosity @ 20°C centipoise	1400	1300

Amine Alkoxylates

Lansurf TA range of amine alkoxylates are effective components for use in the formulation of corrosion inhibitors. They offer good emulsification characteristics and can be used to neutralize acid components such as sulfonic acids and phosphate esters to produce highly effective emulsifiers. Lower ethoxylates such as Lansurf TA2 can help increase the viscosity of acidic systems.

	Lansurf TA2	Lansurf TA15
Description	Tallow Amine + 2 EO	Tallow Amine + 15 EO
Appearance @ 25°C	Clear liquid	Clear liquid
Density @ 20°C (g/cm ³)	0.91	0.95
Viscosity @ 20°C centipoise	200	200
Cloud point °C 10% in 25% BDG	-	53
HLB (calculated)	5.5	14.2

Castor Oil and Fatty Acid Ethoxylates

The Lansurf CO range of castor oil ethoxylates are effective emulsifiers, lubricants and dispersants for a wide range of applications such as drilling fluids.

	Lansurf CO12	Lansurf CO40
Description	Castor Oil + 12 EO	Castor Oil + 40 EO
Appearance @ 25°C	Clear Liquid	Clear Liquid
Density @ 20°C (g/cm ³)	1.01	1.07
Viscosity @ 20°C centipoise	790	360
HLB	7	13.5
Cloud point °C 10% in 25% BDG	52	74
pH 5% aqueous	6	6

EO/PO Block Polymers

The Lansurf range of ethylene oxide/propylene oxide block polymers are used in a variety of applications. They are effective components in demulsifier formulations where they act as treaters/droppers. They provide good emulsification and dispersion characteristics and can provide foam control and lubricity to water based drilling fluids.

	Lansurf DPE201	Lansurf DPE253	Lansurf GPE35
Description	Diol EO/PO Block Polymer	Diol EO/PO Block Polymer	Triol EO/PO Block Polymer
Appearance @ 25°C	Clear Liquid	Clear Liquid	Clear Liquid
Mean molecular weight	2000	2500	3500
Cloud point °C (10% in 25% BDG)	35	59	-
Cloud point °C 1% aqueous	-	-	44
Density @ 20°C (g/cm ³)	1.02	1.04	1.03
Viscosity @ 25°C centipoise	390	650	800
pH 5% aqueous	7.5	6.5	7

Sorbitan Esters and Ethoxylates

The Lansurf sorbitan esters and their ethoxylates find application in the formulation of asphaltene inhibitors/dispersants, they are also effective emulsifiers in the production of oil based drilling muds. They can also find application as components in the manufacture of corrosion inhibitors, their low toxicity makes them suitable for use in environmentally sensitive applications.

	Lansurf SMO	Lansurf STO	Lansurf SMO81	Lansurf SMO80	Lansurf STO85
Description	Sorbitan mono-oleate	Sorbitan tri-oleate	Sorbitan mono-oleate + 5 EO	Sorbitan mono-oleate + 20	Sorbitan tri-oleate + 20 EO
Appearance @ 25°C	Liquid	Liquid	Liquid	Liquid	Liquid
Density @ 25°C (g/cm ³)	1.00	1.00	1.15	1.10	1.02
Viscosity @ 25°C centipoise	1100	230	465	720	270
HLB	4.3	1.8	10	15	11
Cloud point °C 1% IN 10% NaCl soln	-	-	-	67	-
Acid value mg/KOH/g	<8	<18	<2	<2	<1.5

Alkyl Benzene Sulfonic Acid Salts

Kemsurf alkyl benzene sulfonic acid salts find application as emulsifiers and dispersants in a range of oilfield applications, Kemsurf PWS is particularly effective as a paraffin dispersant. Kemsurf CA can successfully be used as a dispersant/emulsifier in oil based drilling muds.

	Kemsurf CA	Kemsurf CA-EH	Kemsurf PWS	Kemsurf SBE
Description	Calcium alkyl benzene sulfonate	Calcium alkyl benzene sulfonate	Iso-propylamine alkyl benzene sulfonate	Alkyl benzene sulfonic acid
Appearance @ 25°C	Liquid	Liquid	Liquid	Liquid
Density @ 20°C (g/cm ³)	1.01	1.00	1.03	1.06
Viscosity @ 20°C centipoise	3000	10,000	4200	1970
Active content %	70	60	92	95
HLB (calculated)	7.3	7.3	11.7	-

Alky and Alkyl Ether Sulfates

Lansurf alkyl and alkyl ether sulfates are effective foaming agents for a range of applications including foam drilling gas well deliquification and cementing. The Lanspec OF products are particularly effective as foaming agents in aqueous solutions containing higher levels of electrolyte.

	Kemsurf DSA	Kemsurf ESD	Kemsurf EM9	Lanspec OF32	Lanspec OF56	Lanspec OF65
Description	Sodium alky sulfate	Sodium alky ether sulfate	Sodium alky ether sulfate	Sodium alky ether sulfate	Ammonium alky ether sulfate	Ammonium alky ether sulfate
Appearance @ 25°C	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid
Density @ 20°C (g/cm ³)	1.04	1.04	1.05	1.03	1.05	1.04
Viscosity @ 20°C centipoise	2000	25	210	80	100	75
Active content %	28	27	30	32	56	65

Sodium Olefin Sulfonate

Kemsurf sodium olefin sulfonate is an effective foaming agent for applications such as gas well deliquification and cementing, where it exhibits good tolerance to electrolyte and divalent metal ions.

	Kemsurf OS38
Description	Sodium Olefin Sulfonate
Appearance @ 25°C	Liquid
Density @ 20°C (g/cm ³)	1.07
Viscosity @ 20°C centipoise	200
Active content %	38

Fatty Acid Imidazolines

The Lanspec OC range of fatty acid imidazolines are effective emulsifiers, for producing both water in oil and oil in water emulsions for applications including drilling fluids, they are also effective corrosion inhibitors.

	Lanspec OC100	Lanspec OC200
Description	Tall Oil Fatty Acid Imidazoline 1:1	Tall Oil Fatty Acid Imidazoline 2:1
Appearance @ 25°C	Clear liquid	Clear liquid
Density @ 20°C (g/cm ³)	0.93	0.94
Viscosity @ 20°C centipoise	200	600
Cyclisation (Typical)	>70%	50%
Amine value (typical) mg KOH/g	210	85

Diocetyl Sulfosuccinates

Kemsurf dioctyl sulfosuccinates are highly effective wetting agents, emulsifiers and dispersants, they can be used as components in demulsifier systems. Their ecotoxicity profile makes them candidates for applications where low environmental impact is required.

	Kemsurf OT60	Kemsurf OT70G
Description	Sodium Dioctyl Sulfosuccinate in Ethanol/Water	Sodium Dioctyl Sulfosuccinate in Glycol
Appearance @ 25°C	Liquid	Liquid
Density @ 20°C (g/cm ³)	1.05	1.10
Viscosity @ 20°C centipoise	43	1500
Active content %	60	70

Phosphate Esters

The Lanphos range of phosphate esters are versatile surfactants. They are widely used in the formulation of corrosion inhibitors, and can be used in the preparation of emulsifiers for applications including oil based drilling muds. They can also be used to boost the performance of other surfactants in conditions of high electrolytes.

	Lanphos PE73	Lanphos PA8	Lanphos PE35	Lanphos PE82K	Lanphos TEP4	Lanphos TEP4K
Description	Cetyl Oleyl Ethoxy Phosphate	2-Ethylhexyl Phosphate	Isotridecyl Ethoxy Phosphate	2-Ethylhexyl Phosphate	Phenol Ethoxy Phosphate	Phenol Ethoxy Phosphate Potassium Salt
Appearance @ 20°C	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid
Density @ 20°C (g/cm ³)	1.06	1.02	1.13	1.12	1.28	1.29
Viscosity @ 20°C centipoise	2500	293	100	210	-	180
Viscosity @ 40°C centipoise	-	-	-	-	2500	-
Acid value mg KOH/gm	87	210	74	-	168	-

Amphoteric Surfactants

The Amphokem range are highly effective foaming agents, finding use in a broad range of applications including foam drilling, gas well deliquification and cementing, with good tolerance to high electrolyte concentrations

	Amphokem CAO	Amphokem CAPO	Amphokem DCA	Amphokem CAB	Amphokem CAPB	Amphokem CADP
Description	Amine Oxide	Amine Oxide	Sodium Coco Ampho Propionate	Lauryl Betaine	Coco Amido Propylbetaine	Sodium Cocoimino Dipropionate
Appearance @ 25°C	Liquid	Liquid	Liquid	Liquid	Liquid	Liquid
Density @ 20°C (g/cm ³)	0.98	0.98	-	1.03	1.05	1.05
Viscosity @ 20°C centipoise	100	150	800	40	20	130
Active content %	30	30	37	30	30	30

