

Mersolat[®] H95

Water Treatment Chemicals

Description

Secondary Alkane Sulfonates (SAS) which are used as raw materials for textile processing chemicals, leather auxiliaries, detergents and cleaning products, as anionic emulsifier for emulsions polymerisations and as antistatic agent for plastic materials.

The surfactants contained in the product comply with the conditions, particularities and limits regarding biodegradability specified in Regulation (EC) No. 648/2004 and its annexes. Information on the use of Mersolat[®] H in applications in contact with food is available on request.

Chemical Composition

Mixture of primarily secondary sodium alkyl sulfonates with an average chain length of C15.

CAS Registry Number

68188-18-1

Typical Properties*

Property	Nominal Value				Unit
	H95	H68	H40	H30	
Mersolat [®]					
Active substance (differential method)	95.0	67.0	39.0	29.0	%
Sodium chloride content, max.	3.5	2.6	1.5	1.2	%
Neutral oil content, max.	1.0	0.7	0.4	0.3	%
pH value 1)	8.0 - 10.5	8.0 - 10.5	8.0 - 10.5	8.0 - 10.5	#
Water content (KF), max.	1.2	30.0	59.5	69.5	%
Iodine Number	0.10	0.10	0.10	0.10	g I / 100g
Monosulfonate content, approx.	83	57	33	25	%
Di- and polysulfonates content, approx.	12	10	6	4	%
Sodium sulphate content, approx.	0.1	0.1	0.1	0.1	%
Viscosity (Höppler), approx.	-	-	80 - 160	15	mPa • s

*The analytical data are guide values.

1) in 30% aqueous solution, calculated for anhydrous product.



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Appearance

- Mersolat[®] H95: White to pale yellow flakes with a weak characteristic odor
- Mersolat[®] H68: Pumpable, white to slight yellow paste with a weak characteristic odor
- Mersolat[®] H40: Clear, pale yellow liquid with a weak characteristic odor
- Mersolat[®] H30: Clear, pale yellow liquid with a weak characteristic odor

Technical data (active substance)

Property	Nominal Value	Unit
<i>Surface tension (according to DIN 53914)</i>		
- 0.01 % active substance	45	mN/m
- 0.1 % active substance	35	mN/m
- 1.0 % active substance	31	mN/m
<i>Viscosity (Höppler) at 20 °C, approx.</i>		
- 0.5 % active substance	1	mPa • s
- 25 % active substance	5	mPa • s
- 30 % active substance	15	mPa • s
Critical micelle-forming concentration	0.6	g (active ingredient) / L
HLB value	11 – 12	#
Solubility in distilled water at 20 °C, approx.	40	% active substance
Solubility in solvents	low in alcohols, minimal in non-polar organic solvents	#

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Application

Raw material for detergents, wetting agents textile processing chemicals and leather auxiliaries

Mersolat[®] H can be used as an anionic surfactant for the production of particularly liquid and highly concentrated paste-like detergents and wetting agents for the textile and leather industry as well as of alkaline and acid industrial cleansers, disinfectant cleansers, and household detergents and cleaning agents. Mersolat[®] H is comparatively stable against acids, alkali, and electrolytes.

Stabilising dispersions

Because of its excellent emulsifying properties Mersolat[®] H is suitable for use in the processing of synthetic latices, natural latex, and acrylate dispersions. Even small addition rates (0.2 – 3.0 %) allow the production of high-percentage plastic dispersions (45 – 50 %) with a high stability.

High grade anionic emulsifier for emulsion polymerisation

Mersolat[®] H is an auxiliary for the manufacture and stabilization of emulsions. It is used as an anionic emulsifier in the emulsion polymerisation of vinyl chloride, acrylonitrile, butadiene, styrene, acrylates, other monomers and their mixtures, especially for the manufacture of ABS. Dispersions with a high stability which form little scale in the reactors can be obtained with only low additions (0.2 – 3.0 %). Mersolat[®] H has proven itself effective in both continuous (addition approx. 2 %) and discontinuous (addition approx. 1 %) polymerisation of E-PVC. The absence of double bonds means that the emulsifier does not act as a radical interceptor which ensures an easily reproducible reaction process.

Antistatic agent

Mersolat[®] H is an antistatic agent which is usually incorporated into the plastics material concerned. It is suitable for use with rigid and semi-rigid PVC, standard and high impact PS, ABS and PP. The product may also be applied to the surface in a dissolved form.

Mersolat[®] H is employed to prevent electrostatic pick-up which can occur both during production processes and when the finished article is in use. The use of products incorporating Mersolat[®] H should be limited to indoor applications, since outdoor use may impair the antistatic properties and adversely affect the light fastness.

The incorporation of Mersolat[®] H reduces the transparency of polymers which would normally be completely transparent. This effect becomes more pronounced as the proportion of Mersolat[®] H increases. Mersolat[®] H slightly impairs the thermostability of S-PVC compounds, in relation to the amount added. This can be compensated by increasing the stabilizer content. As a result of its manufacturing process, Mersolat[®] H contains small amounts of sodium chloride crystals. In the case of thin-walled articles, there is a possibility that sections will be defective. Mersolat[®] H is therefore not particularly suitable for blown or calendered film.

The most suitable fields of application for Mersolat[®] H are extruded profiles and articles for injection moulding.

Mersolat[®] H can also be applied as a solution to finished products. The effect here is, however, only temporary as the film which has been applied can be easily wiped off or removed in a similar manner.

Table 1 gives an overview of the effect of Mersolat[®] H on the electrostatic properties of rigid S-PVC

It can be seen from Table 1 (next page) that the incorporation of 1 p.b.w. Mersolat[®] H is sufficient to lower the surface resistance by 105 and to bring about a considerable reduction in both the limit charge and the half-life. All the tests to



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determine the antistatic properties were carried out on compression moulded panels (120 x 120 x 40 mm) according to DIN 53 486 ("Assessment of electrostatic properties ").

Table 1: Effect of Mersolat[®] H on the electrostatic properties of rigid PVC in relation to the amount added (test according to DIN VDE 0303 Part 3)

Components	Amount (p.b.w.)	Surface resistance prior to charging (Ω)	Surface resistance after charging (Ω)	Limit charge (V/cm)	Half-life(s)
S-PVC (k-value 60)	100				
Ba/Zn stabiliser	1.5				
Epoxidized soy bean oil	2.0				
Lubricant	0.5				
Pigment (TiO ₂)	2.0				
without Mersolat [®] H95		10 ¹⁵	10 ¹⁵	-3.950	> 3.600
+ Mersolat [®] H95	1.0	10 ¹⁰	10 ¹⁰	-685	45
+ Mersolat [®] H95	2.0	10 ⁹	10 ⁹	-300	1
+ Mersolat [®] H95	3.0	10 ⁹	10 ⁹	-130	1



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Packaging

Road tanker: H68; H40; H30
Plastic tank, contains 1000 kg: H40; H30
Big bag, variable: H95
Plastic drum: H40(120 kg); H30(120 kg)
Plastic bag, contains 20 kg: H95

Storage conditions

If correctly stored and kept in the original sealed package, the shelf life is at least 2 years. Mersolat® H95 is sensitive to moisture and must therefore always be kept in its tightly sealed original container in a cool, dry place protected from light. Mersolat® H68 tends to separate and should be homogenized during storage regularly and before use. To avoid turbidity and separation, Mersolat® H40 / H30 should not be stored at temperatures below 20 °C.

Handling

A receiving inspection is recommended. The product should be stored in its tightly sealed original container in a cool, dry place. Once opened, containers should be resealed tightly after removal of product.

Mersolat® H is not classified as dangerous cargo according to the regulations on dangerous goods transport, but is still subject to labelling according to German and EU legislation on hazardous substances owing to irritant properties to skin and eyes. Irritant Xi, R 36/38, Xn; R22, H302 - Harmful if swallowed, H319 - Causes serious eye irritation, H315 - Causes skin irritation, H412 - Harmful to aquatic life with long lasting effects.

Consult the safety data sheet for relevant safety data & references as well as possibly necessary warning labels.

® = registered trade mark

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North America
+1.833.LANXESS
customer.care@lanxess.com

Europe, Middle East & Africa
+44.161.875.3800
emea.export@lanxess.com

South & Central America
+55.19.3522.5083
atendimento.cliente@lanxess.com

Asia Pacific
+86.21.6109.6666
Orders.apac@lanxess.com

