



Kaiser
INDUSTRIES LTD.

Surfactant For Crop Protection Chemicals



Innovators In
Surfactant Technology

Profile

Kaiser Industries Limited commenced its operations way back in 1994 as a specialty chemical provider to the agro chemical industries. For seeing the tremendous scope for specialty chemicals in agrochemical industry, the company strategically planned and installed state of art manufacturing facilities at Haryana, Gujarat and J&K. Kaiser Industries Limited has successfully extended its expertise to a spectrum of products like Anionics, Non Ionics, Cationics, Polymeric and their tailor made blends.

Born with a mission to deliver excellent quality Kaiser Industries Limited developed in-house **R&D Center** which is **recognized by Department of Scientific & Industrial Research, Ministry of Science & Technology, Govt. of India**. Cultured with expertise and powered with modern day dynamics, the company stands testimony to a chain of successful achievements in its several years of existence.

The multi utility techno labs manned by industrial experts ensures optimum production values through research, development and quality control activities. The three fully functional plants run on ISO 9001 guidelines, the company boasts of a combined production capacity of 3000 MT per year. Kaiser commands almost 27% of the countries. Total agrochemical surfactant market. Kaiser scientists continually strive to give the right surfactant for the formulation blend to yield maximum bio-efficacy of the toxicant and its ability to demonstrate the formulation technology of the new generation low dose formulations sets it apart from other surfactant manufacturers.

Our clientele are MNCs, tech. manufacturers and bulk formulators are the fruits of our sacrosanct commitment to achieve total customer satisfaction.

Process Capabilities

Alkylation	Blending	Compounding	Condensation	Distillation
Epoxidation	Esterification	Ethoxylation	Oxidation	Phosphitation
Reduction	Sulphonation	Spray Drying	Neutralisation	

The agrochemical formulations and the surfactant range that we offer.....

The commercially available crop protection products are in fact formulations based on an active ingredient. By means of adding inserts and then blending with emulsifiers, dispersing or wetting agents, a uniformly dispersed sprayable dilution in water is possible for field application by suitable spray equipment. Depending on the application profile of the specific active ingredient it must be decided whether a solid or liquid formulation is most suited. The common and available formulations in the industry are as:

- Emulsifiable Concentrates - EC and Soluble Concentrates - SL
- Oil in Water Emulsion - EW
- Wettable Powder - WP
- Suspension Concentrates - SC
- Granules
- Water Soluble or Water Dispersible Granules - WG/WDG
- Microemulsion - ME
- Agriculture Spray Adjuvants

Emulsifiable Concentrate - EC

The formulation of an active ingredient as an Emulsifiable Concentrate (EC) is still common as it is simple to manufacture and low in cost. It contains an active ingredient, a solvent and an emulsifier system that allows the formulation to be mixed with water to form a stable emulsion. The Emulsol range of emulsifiers offered by Kaiser gives a uniform and stable emulsion that can be applied on crop. The commonly used emulsifier system is a blend of one anionic emulsifier component with one or more non-ionic emulsifier component. Some of the best known emulsifier system of Kaiser in the crop protection chemical industry are Emulsol 371-A & Emulsol 371N, Emulsol 3522 & Emulsol 7066, etc with the advantage of:

- Rapid emulsifying action
- Broad spectrum activity
- Excellent spontaneity, blooming, thickness & stability
- Lower dosage levels
- Low viscosity free flowing liquids providing easy handling and pumping
- Wide flexibility
- No phytotoxic effect
- No hydrolysis with toxicant

Emulsol emulsifiers are offered as modular system. The formulator is required to use generally two emulsifiers which form a matching pair. The ratio and overall dosage of emulsifiers for a given formulation is determined by simple laboratory technique as given in this presentation.

Oil in Water Emulsion - EW

Due to the low flash point of organic solvents efforts are being made to replace them with universal solvent – Water. Many such environment friendly agro chemical formulations have been commercialized. Emulsol B -25 (for Butachlor), Emulsol TEW (for Triacantanol), Emulsol NB (for Nitrobenzene) are the few examples which have been developed with out incorporating any solvent after extensive R&D.

Wettable Powder

Solid active ingredients which are not soluble in common solvents are formulated as wettable powders. Wettable powder is a formulation in dry form with surfactant, often mixed with or coated on a fine solid carrier for dispersion in water to form a suspension.

Kaisperse range of wetting, dispersing and suspending agents are well known under the brand names of Kaisperse 40, Kaisperse 95N, Kaisperse DTS, Kaisperse WT, Kaisperse DB are non-phytotoxic surfactants with the following advantages:

- Good wetting power
- Widely effective
- Low foaming
- Good stability to hard water
- Excellent stability at elevated temperatures
- Good cold water solubility

Suspension Concentrates

Because of dusting problems hazards involved in manufacturing and handling of agrochemical WP formulation led to the development of flowables or suspension concentrates. Suspension Concentrate formulation is prepared in such a manner that the active ingredient is dispersed as fine particles in water or organic liquid so as to form a stable suspension. The process requires wet milling of the active ingredient in presence of surface active agents avoiding air entrapment and foaming by adding just sufficient quantity of antifoam. After grinding the product is mixed with binder generally Xanthan gum to achieve the desired viscosity. Because of finer particle size less than 5 micron the SC formulation exhibit higher bio-efficacy as compared to WP formulations. Suspensol 99, Kaisperse DB and Kaisperse DTS are the surfactants that Kaiser offers for SC formulations.

Water Soluble or Water dispersible Granules

Water soluble or water dispersible granules are the formulations in granule form providing ready dispersibility in water forming a suspension or a solution. Advantages over the other formulations are-solvents are avoided, non-dusty,easily wetted, free flowing,cheaper disposable packings can be used. Kaiser offers Emulsol AG 20 for Glyphosate WG, Kaisperse DB and Kaisperse DTS for Sulphur WDG, COC WDG, Imidacloprid WDG, Thiomethoxam WDG, etc.

Microemulsion

A microemulsion is thermodynamically stable, isotropically clear dispersion of two immiscible liquids, consisting of microdomains of one or both liquids stabilized by an interfacial film of surface active molecules. Microemulsions are thermodynamically stable.They essentially consists of oil + water+ surfactant (+ cosurfactant).Kaiser offers Emulsol 100ME and Emulsol 110 ME as surfactants for microemulsion.

Emulsol Emulsifiers

Selection of Emulsifier : The nature of toxicant used and the type of solvent used will influence the selection of emulsifiers. Depending on the source of raw materials and the emulsion performance standards aimed at, the dose of emulsifier and the ratio of the emulsifier components will vary. Therefore, we recommend that the appropriate ratios are identified (screened) by the formulator using representative samples of the inputs such as toxicant, solvent, stabilizer, etc. However approximate indicators are readily available from us.

Our technical service department will do the necessary laboratory work of screening, if a representative blank solution (i.e. EC with out emulsifier) is submitted.

Screening Procedure

For a two component emulsifier system, let A and B be the two emulsifiers forming the matching pair. The screening procedure is broadly in two parts. Step 1 to 3 establishes the appropriate ratio of the two emulsifiers. The step 4 helps to identify the total emulsifier content required for the EC.

Step 1 : Prepare a stock solution (also called a blank) allowing 5% gap of the emulsifiers. The stock solution will contain the toxicant, solvent and all the additives representative of the ingredients to be used in the bulk formulation.

Step 2 : Weigh 95 g of the stock soln. and add 5g of emulsifier A. Stir well. Label this as 5% A. This is an EC with 5% of the emulsifier A. Similarly mix another 95g of stock solution and 5g of emulsifier B. Label it as 5% B.

Step 3 : In to 9 stoppered test tubes, volumetrically blend 2ECs viz. 5% A and 5%B and in the proportion as given in the below table for test tube no 2 to 10. The 9 ECs as blended and 2 unblended ones make a battery of 11 EC samples for emulsion testing.

Test Tube No.	1	2	3	4	5	6	7	8	9	10	11
5% A Vol ml	-	0.5	1	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
5% B Vol ml	5	4.5	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5	-
Total Vol ml	5	5	5	5	5	5	5	5	5	5	5
Ration A/B	0/100	10/90	20/80	30/70	40/60	50/50	60/40	70/30	80/20	90/10	100/0

In testing the emulsion performance of the 11 samples, the test criteria can be as per BIS, WHO/CIPAC. In this test search has been made for the best ratio of emulsifiers. The best ratio is the one which exhibits blooming, glass wetting, bluish tinge and dense emulsification.

Step 4 : Selection of dosage Using the best ratio of A/B evaluate the effect of total emulsifier content e.g. 4%, 5%, 6%, etc. The emulsion testing is done as per the chosen standards and passing criteria.

Bulk Production of EC

Scaling Up : Bulk production of EC may be done according to the cosen ratio and the dose of the emulsifiers. However on bulk preparation emulsion performance is deviating the same can be rectified as per the above technique and now taking blank as the EC formulated as above.

Emulsifier Recommendation & Dosage

Toxicant	Solvent	Emulsol A/B	Dosage
Alphamethrin 10% EC	Mix-xylene / C-IX / Remax	Emulsol 371-A/ 371-N OR Emulsol 4000/ 5000	6-8%
Chlorpyriphos 20% EC	Mix-xylene / C-IX / Remax	Emulsol 371-A/ 371-N OR Emulsol 4000/ 5000 OR Emulsol 2048-A/ 2048-N	5-6%
Cypermethrin 10% EC	Mix-xylene / C-IX / Remax	Emulsol 371-A/ 371-N OR Emulsol 4000/ 5000 OR Emulsol 2048-A/ 2048-N	6-8%
Cypermethrin 25% EC	Mix-xylene / C-IX / Remax	Emulsol 371-A/ 371-N OR Emulsol 4000/ 5000 OR Emulsol 2048-A/ 2048-N	6-8%
Chlorpyriphos 50+ Cypermethrin5%EC	Mix-xylene / C-IX / Remax	Emulsol 371-A/ 371-N OR Emulsol 4000/ 5000 OR Emulsol 2048-A/ 2048-N	6-8%
Malathion 50% EC	Mix-xylene / C-IX / Remax	Emulsol MAL-A/ MAL-N	5-6%
Propanil 36% EC	Cyclo+ CIX	Emulsol PPA / PPN	12-15%
Propanil + Triclopyr	Cyclo+ CIX	Emulsol PPTA / PPTN	12-15%
Dimethoate 30% EC	Cyclo+ CIX	Emulsol DMT-A / DMT-N	6-8%

Triazophos 40%EC	Mix-xylene/ C-IX /	Emulsol TZA / TZN Emulsol 10A/ 11N	6-8%
Butachlor 50%EC	Kerosene	Emulsol Buta-A/Buta-N	4-5%
Dicofol 18.5%EC	Mix-xylene/ C-IX /	Emulsol 3522DF/3144DF	8-10%
Pendimethlin 30%EC	Mix-xylene/ C-IX /	Emulsol PM-21A/PM-21N	8-10%
Glyphosate 41%SL	Water	Emulsol GL-07	12-15%
Imidacloprid 17.8%SL	NMP/ DMSO	Emulsol IMD-700	2%
Hexaconazole 5%EC	Mix-xylene/ C-IX	Emulsol HC-22A/HC-22N	8-10%
Deltamethrin 2.8%EC	Mix-xylene/ C-IX	Emulsol DLX-A/DLX-N	8-10%
Endosulphan 35%EC	Cyclo+ CIX	Emulsol 2240 / 2162	5-6%
2,4-D Ethyl Ester 38%EC	Kerosene/ C-IX	Emulsol 24D-X / 24DY	5-6%
Profenophos 50%EC	Mix-xylene/ C-IX	Emulsol PFA / PFN OR Emulsol PFAM/PFNM	10-15%
Pretilachlor 50%EC	Mix-xylene/ C-IX	Emulsol PRA / PRN	6-8%
Ethion 50%EC	Mix-xylene/ C-IX	Emulsol ETA/ ETN	6-8%
Propergite 57%EC	Mix-xylene/ C-IX	Emulsol OMT-A/ OMT-N	8-10%
Propioconazole 25%EC	Mix-xylene/ C-IX	Emulsol PCA / PCN	8-10%
Methylparathion 50%EC	Mix-xylene/ C-IX	Emulsol MPA/ MPN	8-10%

Fenvalerate 20%EC	Mix-xylene/ C-IX /Remax	Emulsol 371-A/ 371-N OR Emulsol 4000/ 5000	6-8%
DDVP 76%EC	Mix-xylene/ C-IX	Emulsol - DDVP	8-10%
Triacntanol 0.05%EC	C-IX	Emulsol 371A/ 371N	6-8%

Emulsol Emulsifiers for Oil in Water Formulations (EW)

Kaiser manufactures a range of Emulsol emulsifier systems for oil in water formulations for generally used formulations such as Emulsol B25 (for Butachlor), Emulsol TEW (for triacntanol), Emulsol NB (for Nitrobenzene).

For preparing an EW formulation the toxicant is blended with Emulsifier and water is slowly added under high shear mixing. A guided recipe is as given below :

Butachlor 48 EW		Nitrobenzene 20 W/V	
Butachlor a.i.	48	Nitrobenzene	22
Emulsol B25	5	Emulsol NB	2
Water	q.s. to make 100	Water	q.s. to make 100

Kaiser R&D Center can offer solutions to other EW environment friendly systems also.

Wettable Powders

Kaiser manufactures a comprehensive range of surfactants (Kaisperse) for agrochemical formulations in powder form. The Kaisperse range includes wetting agents, dispersing agents, wetting cum dispersing agents. Kaisperse range covers full spectrum of surfactants used in powder formulations for broad range of toxicants.

Kaisperse ranges of surfactants are well established and have proven them in the market.

KAISPERSE - 40	:	Wetting agent
KAISPERSE - DB	:	Suspending agent
KAISPERSE - DTS	:	Dispersing agent
KAISPERSE - WT	:	Wetting cum suspending agent
KAISPERSE - 95N	:	Wetting cum dispersing
KAISPERSE - NST	:	Wetting cum suspending

Product Specifications

Kaisperse 40

Kaisperse 40 is an anionic spray dried wetting agent in powder form specially developed for agrochemical WP formulations viz. Malathion, Isoproturon, COC, Carbendazim, Atrazin, etc.

Appearance	:	Off white coloured spray dried powder
Chemical Nature	:	Anionic blend of alkyl aryl sulphonates
Active Content	:	40%± 2%
Loss on drying	:	3% max.
Ph	:	8 – 10

Available in 20/25 kg HDPE Bags with inner liner.

Kaisperse DB

Kaisperse DB is anionic suspending agent and is also used in various WP, SC and WDG formulations. It is easily compatible with all other ingredients / adjuvants used in WP, SC and WG/WDG Formulations.

Specification

Appearance	:	Dark brown coloured free flowing powder
Bulk Density	:	0.3 – 0.5
pH(2 % aq. Sol.)	:	6.0 –10.5

Solubility

5% in water	:	Soluble
Solid Content	:	90.0% Min.

KAISPERSE –DTS

Kaisperse DTS is anionic dispersing agent and is used in various WP, SC and WG/WDG formulations. It is easily compatible with all other ingredients / adjuvents used in WP, SC and WG/ WDG Formulations.

Specification

Appearance : Light brown coloured free flowing powder

Bulk Density : 0.7 – 0.8

pH(2 % aq. Sol.) : 6.0 –8.0

Solubility

5% in water : Soluble

Solid Content : 95.0% Min.

Kaisperse WT

Kaisperse WT is anionic wetting cum suspending agent and is used in various WP, SC and WG/WDG formulations. It is easily compatible with all other ingredients / adjuvents used in WP, SC and WG/ WDG Formulations.

Appearance : White to off white coloured free flowing powder

pH(2 % aq. Sol.) : 8.0 –10.0

Moisture : 5.0 % max. m/m

Solubility :

5% in water : Soluble

Solid Content : 95.0% Min. m/m

Kaisperse 95 N

Kaisperse 95 N is an anionic suspending cum wetting cum dispersing agent formed with a specialty blend of alpha olefin sulphonates with alkyl aryl sulphonates and naphthalene formaldehyde condensates.

Appearance : Off white free flowing powder

Ph (1% aq. Soln.) : 7 – 9

Moisture : 3% max. m/m

Solubility : Soluble in water

Chlorides : 0.5% max. m/m

Recommendation : Kaisperse 95 N is specially blended as a single component in wettable powder formulations of Tricyclazole, Carbendazim, Isoproturon, Malathion, Metalaxyl + Mancozeb, Alphamethrin, etc.

Kaisperse NST

Appearance : Cream coloured free flowing powder

Chemical Nature : Alkyl taurate

Ph (1% in water) : 7.5 – 8.5

Moisture Content : 5% max.

Solubility : Soluble in water

Anionic Content : 70 % m/m min.

Recommendation : Kaisperse NST is specially designed for Clodinofof propargyl WP formulation and is effective at 3 - 4% dose. It is an excellent bio- degradable wetting cum suspending agent, non - irritating to skin and can be used in various other WP/WG formulations.

Suspension Concentrates

Kaiser manufactures a range of surfactants for agrochemical formulations which are thoroughly tested in its formulation development laboratory. Suspensol 99 is being offered for Hexaconazol 5% SC formulation. Kaisperse DB and DTS are recommended for Sulphur 40SC and COC 50SC. Suspensol 100 in combination with Suspensol WT is Recommended for Indoxacarb, Imidacloprid, Fipronil, Buprofenzin SC formulations.

For preparing as SC formulation the toxicant is mixed with a surfactant solution and if required sorptive clay and antifoam are added. The mixed material is wet milled to a particle size less than 5 micron taking care of maintaining the temp. below 30C during milling. After milling the material is mixed with binder solution preferably Xanthan Gum.

Guide Receipe For Hexaconazole 5% SC

Hexaconazole a.i.	-	5.0
Suspensol 99	-	5.0
Silica	-	1.7
Propylene glycol	-	5.0
Antifoam	-	1.7
Biocide	-	1.5
Xanthan Gum	-	0.4
DM Water	-	q.s. to make 100

Kaiser R&D Center can offer solutions to other SC environmentally friendly systems also.

Cartap Hydrochloride Formulations

Kaiser offers Emulsol PAP as acidity stabiliser and Emulsol NP 85 as binder cum surfactant for Cartap 4G and Cartap 50 SP formulations.

EMULSOL - PAP

Chemical Identity	:	Isopropyl Acid Phosphate
Ionic Nature	:	Anionic
Application	:	Acid Stabilizer for Cartap Hydrochloride 4G & 50 SP Formulation

Specification

Physical Appearance	:	Colourless to pale yellow Coloured, clear, homogeneous liquid
Acid Value (mg KOH/ g)	:	420 Minimum
pH 1% aq. solution	:	1.0 to 3.0
Moisture Cont.	:	1.0 % Max.
Solubility in water (5% m/m)	:	Soluble

EMULSOL - NP 85

Chemical Identity	:	Blend of Polyoxy Alkyl Aryl Phenyl ether derivative and binder additives
Ionic Nature	:	Non Ionic
Application	:	Binder cum Surfactant for Cartap Hydrochloride 4G & 50 SP Formulation

Specification

Physical Appearance	:	Colourless, Clear, Homogeneous Liquid
pH 5% aq. solution	:	4.50 to 6.50
Moisture Cont.	:	0.50 % Max.
Solubility in water (5% m/m)	:	Soluble
Cloud Point	:	54 to 60°C
Solid Content	:	70% m/m Min.

Wettable and Water Dispersible Granules

Kaiser offers a range of surfactants for extruded and spray dried granular agro chemical formulations after extensive development in its application development laboratory. As a result Emulsol AG 20 is widely used in Glyphosate SG formulation. Kaisperse DB and Kaisperse DTS are recommended for Thiomethoxam 25 WDG, Sulphur 80WDG, Imidaclopride 75WDG, etc. formulations.

Wettable and Water dispersible granules are prepared mainly by extrusion and spray drying techniques. In case of extrusion process dough is prepared by mixing toxicant, surfactant, inert and binders. The dough is converted to granules in an extruder, granules are dried and spherodised. In case of spray drying process slurry of toxicant, surfactant, inert and binder is prepared in water are wet milled and spray dried.

Guided Recepte For Thiomethoxam WDG

Thiomethoxam a.i.	:	25
Kaisperse WT	:	3
Kaisperse DB	:	2
Binder	:	0.1
Corn starch/ Lavigated Clay	:	q.s. to make 100

EMULSOL - AG20

Chemical Identity	:	Blend of Fatty amine ethoxylate and polyethanoxy ether
Ionic Nature	:	Non Ionic
Application	:	Solubilizer and wetting agent for Glyphosate SL Formulation.

Specification

Physical Appearance	:	Golden yellow coloured, clear, homogeneous liquid.
pH 5% aq. solution	:	7.0 to 9.0
Moisture Cont.	:	1.0 % Max.
Solubility in water (5% m/m)	:	Soluble

Microemulsion

Kaiser offers Emulsol ME series emulsifiers for microemulsion formulations. Microemulsions are well suited for formulations with low active ingredient content

These are thermodynamically stable and provide a clear solution when diluted for spray applications. The particle size is around 10 nm and thereby providing wide coverage.

For preparing a microemulsion formulation the toxicant is dissolved in small quantity of suitable solvent and blended with surfactant. It is then mixed with a co-surfactant and water is added under continual stirring. A co-surfactant is added to increase the solubilising power of the surfactant system. Amines, alcohols or ether alcohols are generally used as co-surfactants.

Guided Recepte For Cypermethrin 10 ME

Cypermethrin a.i.	:	10
Emulsol ME – 100	:	15 – 20
Co – surfactant	:	5 – 10
Deionised Water	:	q.s. to make 100

Agriculture Spray Adjuvant

Emulsol Sunvit

Emulsol SUNVIT is a blend of anionic-nonionic surfactant. It exhibits excellent wetting, spreading and sticking properties with various agrochemicals. SUNVIT is added to tank mixture of Fungicides, Herbicides, Insecticides, Growth regulators and foliar fertilizers

Advantage

- Ensures uniform coverage of all parts of the plants with spray.
- Dusty plants are properly covered.
- Reduces undesirable spotting by the spray.
- Harder to wet parts of the plants are completely covered.
- Unsatisfactory spray treatment are avoided and adherence.
- Ensure uniform film coverage of active ingredient to the plant.
- Improves rain fastness.
- Improves penetration of active ingredient in the leaf surface.
- Dose not form a gel when diluted.
- Fast wetting with low foaming.

Specification

Physical Appearance	:	Clear Amber colour viscous liquid.
Chemical Composition	:	Blend of anionic and non ionic surfactant
pH 1% aq. solution	:	7.5-9.0
Density @25°C	:	1.020±02 g/ml

Emulsol K-SIL

Emulsol K-SIL is a spray adjuvant for agricultural applications. It is a silicon based new generation super spreading adjuvant which can be used with a broad range of agrochemicals, foliar nutrients, plant growth regulators to provide quick and enhanced spreading thereby leading to better spray coverage and agrochemical efficacy.

Advantage

- Improve spray coverage of all parts of the plants.
- Improves Rain fastness.
- Useful with a broad range of agrochemicals.
- Reduction in water requirement.
- Increased pesticide efficacy with rain fastness makes the spray much more reliable.
- Ensure uniform film coverage of active ingredient to the plant.
- Improves penetration of active ingredient in the leaf surface.
- Lesser cost of agrochemical usage.
- High-efficiency spray application reducing pesticide usage and residue levels to meet stringent regulations.

Specification

Physical Appearance	:	Off white colour viscous liquid.
Chemical Composition	:	Silicon based Surfactant
pH 1% aq. solution	:	6.0-8.0
Density @25°C	:	1.05±0.1 g/ml

Emulsol Kaisurf

Emulsol KAISURF is a specially formulated non-ionic acrylic emulsion. It is a specially formulated product based on acrylic copolymer having excellent wetting, spreading and binding properties and is specially recommended for use with Metsulfuron WP.

Specification

Physical Appearance	:	Milky white bluish emulsion
Chemical Composition	:	Non-ionic Acrylic emulsion
Solid Contents	:	30% min.
pH 1% aq. solution	:	7-9
Density @ 25°C	:	1.00±0.02 g/ml

EMULSOL - SUF

Emulsol- SUF is a cationic surfactant. It exhibits excellent solvency, low foaming, wetting, spreading and binding properties. It is mostly used with sulfonyleurea-based herbicides (Sulfosulfuron WG).

Specification

Physical Appearance	:	Golden yellow to amber colour liquid.
Chemical Composition	:	Cationic Surfactant
Amine Value	:	46-54%
pH 1% aq. solution	:	8-10
Density @ 25°C	:	1.04±0.02 g/ml

Antifoam

Kaiser offers silicon based antifoams for use in while making agro chemical formulations. In case of SC formulations while wet milling the air entrapped has to be removed by the use of antifoam.

KAF - 20

- Chemical Identity : Silicon based antifoam
- Application : KAF-20 is an excellent antifoaming agent in liquid form for SC formulations with foam control under both low and high temperatures and over a wide pH range.

Specification

- Physical Appearance : Milky white coloured, homogeneous liquid.
- pH 5% aq. solution : 7.0 to 8.0
- Solubility in water (5% m/m) : Soluble

Product World of Kaiser

SIZING / DESIZING AGENTS-WETTING AGENTS-DETERGENTS-DYEING / PRINTING ASSISTANTS-ANIONIC/NON-IONIC WETTING AGENTS & DETERGENTS-ANTI-FOAMING/DEFOAMING AGENTS-CHELATING AND SEQUESTERING AGENTS-SCOURING / KIER BOILING AGENTS - SPIN BATH ADDITIVES - SPIN FINISHES-CATIONIC ANTI-STRIPPING-AGENTS FOR BITUMEN-EMULSIFIERS-DISPERSING AGENTS-CORROSION INHIBITORS & ANTIFOULING AGENTS-DEMULSIFIERS-PRESERVATIVES-ANTISTATIC AGENTS-WAX EMULSION-TANNING AGENTS-SULPHONATED PRODUCTS-SOFTENING AGENTS-BATCHING OILS-PITCH / RESIN REDUCING AUXILIARIES-GUMS-PLUS SEVERAL OTHER AUXILIARIES PREPARED TO CLIENTS' SPECIFICATIONS FOR THE FOLLOWING INDUSTRIES.

- Textiles (Cotton, Blends with Synthetics, Woollens, Rayon, Nylon and others Man-Made Fibers)
- Road Construction
- Pesticidal Industry
- Petroleum Refineries / Petrochemical Complexes
- Oil Well Drilling
- Paints
- Plastic Industry
- Paper Industry
- Leather Industry
- Jute Industry
- Laundry Industry
- Rubber Industry
- Soaps and Detergents
- Fertiliser Industry
- Pharmaceuticals
- Cosmetics
- Dairy Industry
- Dyes and Pigments



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