Technical Information

Efka® FA 4602

(old: Texaphor® TR)

BASF
The Chemical Company

general	anti-settling agent for non-aqueous paint systems Efka® FA 4602 has been used with great success for years in the paint industry as a special agent for preventing sedimentation. Efka® FA 4602 was developed as a result of detailed studies regarding interfacial activity. The mode of action of Efka® FA 4602 systems results from the high surface activity of its constituents with almost all pigments. If processed properly, the individual pigment particles are coated with a monomolecular layer of adsorbed compounds which prevent agglomeration into larger particles, with the result that the fine particles remain in suspension and no caking occurs.
chemical nature	blend of selected fatty alcohol sulfates. Efka® FA 4602 does not contain any alkali ions.

Properties

physical form	viscous liquid
shelf life	subject to appropriate storage under the usual storage and temperature conditions, our products are durable for at least 2 years.

typical properties (no supply specification)

density at 20 °C (68°F)	~ 1.05 g/cm^3
pH	~ 7
cloud point	< 5°C
Brookfield viscosity at 23 °C (73°F)	~ 125 mPa·s

Application

Efka® FA 4602 is effective in most paints, provided they are not distinctly polar in their composition. arranged according to the type of binder, the following systems are suitable**:**

- all kinds of alkyd resin systems, as well as paints where the main part of the binder of consists of alkyds
- oil paints and oleo-resinous varnishes
- urethane oils and resins, provided they contain no free isocyanate groups
- epoxy resin and epoxy ester paints (if extremely high chemical resistance is required of these paint systems, Efka® FA 4602 should only be used after suitable detailed tests)
- chlorinated rubber systems and their combinations,
- asphalt and bituminous paints (also in combination)
- nitrocellulose synthetic resin laquers with a high proportion of alkyd resins.

Efka® FA 4602 should not be used in the following systems:

- polyurethane paints
- paints based on unsaturated polyesters
- cyclised rubber paints

Efka® FA 4602 is very effective with most pigments. Efka® FA 4602 is most important if pigments and fillers having a high specific gravity are used, e.g.

- zinc chromate
- green chromium oxide
- red lead
- titanium dioxide
- iron oxide pigments, including natural ochre
- ithopone
- barytes

Efka® FA 4602 also acts with finely dispersed pigments where the tendency to settle is basically low. However, if they do settle after a long period, hard sediments normally form which are difficult to redisperse. This is effectively reduced by the use of our Efka® FA 4602.

Efka® FA 4602 must not be used with metallic pigments such as zinc dust and aluminium paints. In the case of pigments in the form of platelets, such as micaceous iron oxide, Efka® FA 4602 is normally ineffective as an anti-settling agent.

Efka® FA 4602 is an anionic substance and if used simultaneously with other auxiliaries, in particular cationic products, trouble may result and we do not recommend it.

It is a well-known fact that the tendency of pigments to settle increases as viscosity is reduced. Efka® FA 4602 is also effective as an anti-settling agent with low-viscosity paint systems such as dipping paints or paint systems which are applied by the aerosol method. Due to the large number of pigments and binders as well as to the many possible combinations, there is a great difference in the tendency to form sediments, and means that the behaviour of Efka® FA 4602 in paint, in particular the amount required, must be determined in each case.

recommended concentrations

Since it is supplied as a liquid, it is extremely easy to incorporate. Efka® FA 4602 is the more effective, the better the medium is brought into contact with the pigment particles.
Efka® FA 4602 is best incorporated by grinding it together with the pigments. It is not advisable to add it beforehand to the clear binder solution since this may lead to problems. It is also possible to add Efka® FA 4602 to the finished paint. In this case, however, it is necessary to ensure even distribution by intensive stirring. In practice, this mode of operation is successful when undesirable sedimentation occurs after the paint has been produced.
If dispersing the pigment in sand or bead mills, our present experience shows that it is advantageous to add Efka® FA 4602 after the dispersion process has been completed. The finished paint should be left to stand for about 24 hours after Efka® FA 4602 has been added and it is advisable to stir the paint once more the day after production.
Efka® FA 4602 can also be milled with dry pigments and is particularly effective in a series of pigments if applied in this way. Large amounts do not always provide optimum anti-settling effect. Indeed, the best performance is achieved with a precise dosage which varies for each paint system.

As a rule, low density pigments require low concentrations; similarly, in the case of binders which counteract sedimentation of pigments more strongly due to their molecular size (e.g. synthetic resin solutions), less Efka® FA 4602 is required than for low-viscosity oil varnishes or boiled oils. Since the amounts required are not only dependent upon the incorporation and type of binder, but also upon the nature of the pigment and, last but not least, upon its surface and particle size, it is difficult to give general figures. The correct amount must be determined for each particular type of paint by means of separate tests.
Overdosage must always be avoided. It is advisable to begin with smallest amount (0.1%) and if the desired effect is not obtained, to slowly increase the dosage. Amounts over 1% are not recommended.
If any defects in flow should occur as a result of overdosage, this can be compensated in many cases by increasing the amount of high boiling solvents (glycol ether, Tetralin®, Dekalin®, Hexalin®) or possibly by adding small amounts of butanol.

Any retarded drying that may occur due to large amounts of Efka® FA 4602 should, if necessary, be eliminated by increasing the dosage of dryers.

Safety
When handling these products, please comply with the advice and information given in the safety data sheet and observe protective and workplace hygiene measures adequate for handling chemicals.

Note
The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights, etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. The agreed contractual quality of the product results exclusively from the statements made in the product specification. It is the responsibility of the recipient of our product to ensure that any proprietary rights and existing laws and legislation are observed.

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