Moisture Scavenger, monofunctional isocyanate, 100% Active

Description

Additive TI is a low viscosity, monofunctional isocyanate which chemically reacts with water to form an inert amide.

Additive TI eliminates the effects of humidity and prevents moisture related problems in polyurethane coatings.

Characteristic Data

Content of	p-Toluenesulfonyl Isocyanate: Min. 98 % Tosyl Chloride: Max. 1.10 %	OMG Borchers 100-70 GC
Color	APHA: Max. 50	ISO 6271

Properties

Additive TI is used for the dehydration of solvents, fillers, pigments and bituminous tars. It rapidly reacts with water and generates carbon dioxide and toluenesulfonamide which is chemically inert with alkyl and aryl isocyanates and is soluble in many common solvents. **Additive TI** does not cause films to yellow.

Additive TI can prevent moisture related problems such as gloss reduction, haze, yellowing and bubbles from CO2 generation in polyurethane coatings.

Additive TI can also react with other active hydrogen chemicals such as alcohols, phenols, amines, amides, etc.

Applications

Additive TI removes moisture introduced with solvents, pigments, and fillers in 1K and 2K PU systems.

Additive TI is recommended to improve the storage stability of di-isocyanates against decomposition and discoloration.

Dosage

Additive TI can be added to moisture cured 1K PU coatings as a package stabilizer. Package the material after deareation is complete. For 2K PU coatings, add **Additive TI** after the pigments and fillers have been wet out with the solvents in the dispersion.

Add **Additive TI** at a rate of 0.5-4.0 % of the total weight of the formula if the moisture content of the coating is 0.05-0.30 %. Do not add the polyol or isocyanate to the batch for 24 hours to complete the moisture elimination reaction. A surplus of **Additive TI** can react with polyols. Best results are obtained when the moisture content can be determined accurately so that the addition rate of **Additive TI** can be calculated.

12g of **Additive TI** is needed to theoretically eliminate 1g of water introduced by solvents. Experience has shown, however, that the reaction is more effective in the presence of a surplus of **Additive TI**, i.e. it is preferable to use 24g of **Additive TI** for reaction with 1g of water from solvents. Solvents are ready to use within several hours after being treated.

Storage

Protect from the effects of weathering and store at temperatures between 5 and 30 °C.

Once opened, containers should be resealed immediately after each removal of the product.

Safety

The product is a highly reactive compound and therefore needs to be handled with care. Follow all precautions on the safety data sheet which contains information on labelling, transport and storage as well as handling, product safety and ecological effects. Please refer to the information sheet M004 entitled "Reizende Stoffe, ätzende Stoffe" (Irritant substances, corrosive substances) issued by the German Berufsgenossenschaft Chemie. The product reacts spontaneously and very vigorously with water, alcohols, amines, acids and alkalis. Such substances must therefore not be poured into vessels already containing the product. The reaction with water yields carbon dioxide at quantities of 1.3 litres per gram of water. The sudden formation of large amounts of gas in a container into which water has penetrated may cause the container to explode, even if the seal has already been broken.

Care must therefore be taken during transport, storage and handling of **Additive TI** to prevent the penetration of moisture into the containers. Once added to the paint as a drying agent, existing guidelines on the application of paints containing solvents apply. Additional precautions are unnecessary provided that the addition rate is proportional to the water content and does not exceed about 5 % of the total formulation.

Additive TI is a very reactive compound. Although it is not very toxic, it causes severe irritation of skin and mucous membranes. Therefore it is essential to prevent exposure of the skin, eyes and airways to undiluted **Additive TI** . Safety goggles and protective gloves must be worn and the inhalation of vapors and aerosols must be avoided when handling the product. To protect the skin, preventive application of an appropriate barrier preparation (e.g. Arretil L manufactured by Stockhausen) is recommended. Breathing apparatus is necessary in inadequately ventilated workplaces. Use of an air-fed hood or a face mask with an A2-P2 combination filter is advisable.

Contaminated areas of skin should be washed immediately with plenty of soap and water. Contaminated clothing should be removed immediately. In the event of contact with the product, the eyes should be rinsed carefully and thoroughly with water and medical advice should be sought. In the event of inhalation of quite large amounts of product vapours or dust, any resulting irritation of the airways should be treated symptomatically (in the same way as any symptoms of irritation caused by inhalation of irritant substances).

Medical advice must always be sought. Product residues can be disposed of in accordance with the following guidelines:

Containers must be emptied completely. They must not be rinsed out with water. Pools of **Additive TI** on the floor or on a laboratory bench can be carefully removed with water or by covering them with the paste-like material described below. Empty containers should be cleaned using the solution described below or by being left to stand without lids in a safe place for several days. Since monofunctional isocyanate is highly reactive with water, it will gradually react with atmospheric moisture to form a solid white substance.

100 g of the solution is sufficient to react with approx. 42 g of **Additive TI**

	solution [wt-%]	material [wt-%]
tertiary butyl alcohol	15	4
petroleum	65	10
butyl acetate	20	4
sand	-	42
diatomaceous earth, industrial grade	-	30
sawdust	-	10
total	100	100

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