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TIB KAT 216

Description

TIB KAT 216 (Dioctyltin Dilaurate), also commonly abbreviated as DOTL, is a liquid, homogeneous catalyst. It has been one of the most commonly used octyl-based organotin catalyst for polyurethane and silicone condensation reactions. *TIB KAT 216* has been the traditional go-to replacement for its butyl analogue, *TIB KAT 218* (Dibutyltin Dilaurate).

is a liquid tin catalyst based on dioctyltin compounds. This raw material basis gives improved toxicological properties compared with dibutyltin derived catalysts.

Main applications for *TIB KAT 216* are:

- catalysis of polyurethane-reactions
- curing of silicone-resins and RTV Silicones
- transesterification and esterification reactions
- stabilizer for PVC.

The reactivity and raw material compatibility of *TIB KAT 216* should be somewhat similar to its butyl tin analogue, *TIB KAT 218*. Due to the larger alkyl group and steric effects and lower active tin metal content (16% vs 18%), *TIB KAT 216* is expected to be somewhat slower in reactivity compared to *TIB KAT 218*, although this would be highly formulation-specific. This reactivity difference is evidenced in both polyurethane and silicone chemistries in general, across all applications. Regarding silicone reactions, *TIB KAT 216*, like all tin-based catalysts, will catalyze the silanol/silane condensation reaction thus acting as both a polymerization and crosslinking catalyst. As a polyurethane catalyst, *TIB KAT 216* will preferentially catalyze the urethane reaction and to a lesser extent the water reaction, thus acting as a polymerization/gelation catalyst.

The dosage of *TIB KAT 216* is depending on the application, normally between 0.1 - 1 wt.-%.

Product Data

Chemical Name	Dioctyltin dilaurate
CAS No.	3648-18-8
Molecular weight	743.78 g/mol
State of aggregation	clear liquid at room temperature (>20°C)

Specification

Tin content	15.5 – 17.0 %
Colour (Gardner)	≤ 3
Density (20°C)	1.01 - 1.03 g/cm^3

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Storage

TIB KAT 216 can be stored for at least one year if kept closed in the original packaging; sensitive to frost. The container should be closed tightly after each use to maximize shelf life. Characteristic of most Sn(IV) organotins, the primary cause of instability would be hydrolysis. Hydrolysis results in the formation of tin oxide insolubles leading to deactivation.

Packaging

25 kg pail, 50 kg pail, 200 kg drum, 1000 kg IBC,

other packaging size upon request.

Packaging USA

440 lb (200 kg) steel drum,

44 lb (20 kg) plastic pail,

other packaging size upon request.

Special advice for Security

Information concerning

- classification and labelling according to the regulations governing transport and hazardous chemicals
- protective measures for storage and handling
- safety measures in case of accident and fire
- toxicity and ecological effects

is given in our material safety data sheet.

Customs Tariff No.: 2931 9000

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Product Carbon Footprint (PCF)

Created by: KlimAktiv Consulting GmbH

PCF-results (emissions)	Value (Mannheim)	Value (Pittsburgh)	Unit
Sum of PCFs (Cradle-to-gate)	10,6		kg CO_2eq/kg
PCF excluding biogenic emissions	10,6		kg CO_2eq/kg
Biogenic emissions	7,93 E-03		kg CO_2eq/kg

The Product Carbon Footprint (PCF) covers one of several environmental impacts of chemical products. The PCF does not allow comprehensive conclusions about the overall environmental performance of the product. Comparisons of PCFs from different data sources are only possible to a limited extent. The PCF presented here applies to the product sold by TIB Chemicals.

The PCF is based on data of the accounting year 2024 and follows the calculation method outlined in ISO 14067, the TfS Guideline, the BASF Guideline, the cradle-to-gate system boundaries, the declared unit kg CO2e/kg product (excl. packaging) and the sum of different emissions from Scope 1, 2 and 3 (raw material and preliminary products (e.g. secondary data), transportation of purchased products and inbound logistics, as well as company- and site-specific processes including primary energy consumption, electricity and heat consumption). The emissions from biogenic carbon and land-use changes are considered as far as data sources are available.

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