TIBCHEMICALS

TIB KAT 716

Description

TIB KAT 716 (Bismuth Neodecanoate) is one of the most commonly used specialty metal-based catalysts for polyurethanes. With a history of usage in a wide range of formulations, *TIB KAT 716* is a suitable benchmark bismuth catalyst when starting development work on new formulations or looking at using lower toxicity alternatives to organotins. *TIB KAT 716* is suitable to replace DBTL in certain polyurethane systems for automotive , industrial or car refinishing systems and as catalyst for PU prepolymers and elastomer formulations. *TIB KAT 716* is supplied with excess free neodecanoic acid to control viscosity.

TIB KAT 716 provides good overall reactivity. In regard to polyurethane elastomers and foams, a good balanced cure is achievable given the presence of both a low metal content and large ligand. Thus, a balanced front-end/pot-life and back-end/ final cure reactivity profile can be achieved. Reactivity in coatings, especially in regard to back-end cure, is greatly improved with the addition of added or exothermically generated heat. Typical of the bismuth carboxylate family of catalysts, *TIB KAT 716* will catalyze most polyurethane reactions and is similar in reactivity to tin-based catalysts, in that it is primarily selective toward the polyol-isocyanate and water-isocyanate reactions. *TIB KAT 716* is hydrolytically stable within typical formulation moisture levels, but this stability will break down with increasing moisture content. In general, bismuth carboxylates exhibit a lower hydrolytic stability compared to organotins.

TIB KAT 716 is typically used in concentrations between 0.01 - 0.1 wt.-% and shows higher activity compared to *TIB KAT 720* (bismuth Octoate) at the same metal content and improved storage and colour stability.

TIB KAT 716 can be dissolved in common solvents for polyurethane systems or added to the reactants either as it is or blended with alcohols. It is recommended to test solution stability carefully.

Other versions of our Bismuth Neodecanoate formulations include *TIB KAT 724* which has a higher Bismuth content, *TIB KAT 724 LA* which combines higher bismuth content with reduced free acid, and *TIB KAT 710 LV* which offers reduced viscosity.

Product Data

Chemical Name	Bismuth carboxylate
CAS	34364-26-6
Molecular weight	722.75 g/mol
State of aggregation	clear liquid

Specification

Bismuth content	15.5 – 17.5 %
Density (20°C)	1.050- 1.150 g/cm^3
Colour (Gardner)	≤ 4
Refracti. index (20°C)	1.4600 – 1.4720

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Storage

TIB KAT 716 can be stored for at least one year if kept closed in the original packaging.

Packaging

25 kg plastic pail,

200 kg plastic drum,

other packaging size upon request.

Packaging USA

44 lb (20 kg) plastic pail,

440 lb (200 kg) steel drum,

2400 lb (1089 kg) IBC,

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.: 3815 9090

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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)	12,2	-	kg CO_2eq/kg
PCF excluding biogenic emissions	12,1	-	kg CO_2eq/kg
Biogenic emissions	7,93E-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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