



TIB KAT 708

Description

TIB KAT 708 (Bismuth and Zinc Neodecanoate) is a commonly used blend of bismuth and zinc co-catalyst that is primarily used in polyurethane applications. This bismuth and zinc neodecanoate utilizes neodecanoic acid as the ligand source, enhancing compatibility with a wide range of polyurethane formulations. The unique reactivity of *TIB KAT 708* is due to the two metal components, each offering different catalytic effects on the overall polyurethane reaction. *TIB KAT 708* can, upon request, be provided with different ratios of bismuth and zinc, depending on the desired reactivity.

TIB KAT 708 is primarily used in polyurethane elastomer and rigid foam applications. This zinc and bismuth neodecanoate blend can also be used in coating and adhesive applications. *TIB KAT 708* is used in specialty chemical applications where toxicity concerns need to be mitigated, serving as a potential replacement for commonly used sulfur functional organotin such as *TIB KAT 319*, *TIB KAT 321* and *TIB KAT 316*. In addition to being used as a polyurethane catalyst, *TIB KAT 708* can be used in lubricant formulations.

TIB KAT 708 provides a balanced reactivity in select polyurethane reactions. Regarding polyurethane elastomers and foams, this balanced reactivity is achievable due to the presence of both a bismuth and zinc component. Typical of bismuth carboxylates, the bismuth component is similar in reactivity to tin-based catalysts in that it is primarily selective toward the polyol-isocyanate reaction, where this reaction is key to the formation of the urethane groups. The zinc carboxylate component will preferentially catalyze the crosslinking reactions forming biurets and allophanates which leads to physical property enhancements such as hardness build. These zinc-specific reactions typically require additional heat to be effective.

Product Data

Chemical Name	blend of Bismuth and Zinc neodecanoate
Cas No.	27253-29-8 / 34364-26-6
State of aggregation	clear liquid

Specification

Bismuth Content (%)	6.0 - 9.0 %
Zinc Content (%)	6.0 - 9.0 %
Color (Gardner Number)	≤ 3
Density (g/ml)	1.0 - 1.2 g/ml
Viscosity (20°C)	≤ 5000 mPa.s



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Storage

TIB KAT 708 can be stored for at least one year if kept closed in the original packaging and away from light and moisture. The container should be closed tightly after each use to maximize shelf life. Characteristic of most Bismuth Carboxylates, the primary cause of instability would be hydrolysis.

Packaging

25 kg pail, 200 kg 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)	-	-	kg CO ₂ eq/kg
PCF excluding biogenic emissions	-	-	kg CO ₂ eq/kg
Biogenic emissions	-	-	kg CO ₂ eq/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.