



BASIC CHEMICALS | INORGANIC SPECIALTY CHEMICALS | COATING SYSTEMS

CATALYSTS | the decisive Plus



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❖❖ LEADERS IN QUALITY AND SERVICE

TIB Chemicals was born following the merger of Goldschmidt TIB of Germany and Goldschmidt Química de México. The nickel chemicals specialist Königswarter & Ebell joined the TIB Chemicals Group in 2010.

The company is a leading international supplier of a wide range of basic chemicals, innovative inorganic specialty chemicals and high-performance coating systems.

The largest production facilities are located in Mannheim and Hagen, Germany and San Luis Potosí, México. Our sales and distribution organisation operates worldwide. TIB Chemicals employs about 350 highly qualified staff who draw on more than 130 years of experience and expertise. Each year they produce and process more than 400,000 tonnes of chemicals and generate revenues of over 120 million euros.

For years, the growth of TIB Chemicals has outpaced the industry average. Our success is based on the high-quality products and tailor-made solutions we develop for our customers, backed by a flexible logistics service. We are committed to supporting our customers and helping them to achieve the business success.

The company is divided into three business units: Basic Chemicals, Inorganic Specialty Chemicals and Coating Systems. All three act flexibly and quickly to meet our customers' wishes and needs. Together they form a strong unit with the strong financial base and logistical and organisational structure of a large corporation.



TIB CHEMICALS



•• THE THREE BUSINESS UNITS OF TIB CHEMICALS

BASIC CHEMICALS

These products include acids and zinc- and sulphur-based chemicals for chemical companies, the metal-working industry, hot-dip galvanising, electroplating, the textile and plastics industries, water treatment and production of foods and beverages.

INORGANIC SPECIALTY CHEMICALS

Based on the elements tin, zinc, copper, nickel and bismuth, these special chemicals are used for electroplating in the electronics and metalworking industries, as copper compounds in the automotive and chemical industries, as catalysts for producing resins, coatings and paints, and as chromate reducers for building materials.

COATING SYSTEMS

Polyurethane- and epoxy-based coating systems to prevent corrosion of pipelines and valves, water treatment facilities and power plants. Thermal Curing Systems, such as hot dip coatings for electroplating and tool manufacturing, as well as stoving varnishes for the packaging industry. Bitumen Specialties for use in building construction, civil engineering and road paving.

Our **catalysts** are presented on the following pages.





∴ TIB KAT® – THE TRADEMARK FOR HIGH-QUALITY CATALYSTS

Today's catalysts have to meet increasingly complex requirements for a vast range of applications. Besides enabling specific reaction profiles for individual applications, they also have to comply with strict rules on environmental compatibility and low toxicity.

In order to live up to all of these expectations and meet our customers' requirements in every case, TIB constantly works to enhance its tailor-made solutions. In doing so, we benefit greatly from the enormous body of expertise we have accumulated over the years – about raw materials, production processes, utilisation conditions and the advances made in connection with different formulations. This has made TIB KAT® a synonym for high-quality specialty catalysts the world over.

In serving our customers, at TIB Chemicals we consistently strive to live up to this reputation. And looking ahead, we want to be the partner of choice for developing catalysts to meet your special wishes and adapting them to meet your changing requirements.



⚡ TIB[®] CATALYSTS AND THEIR CHEMISTRY

TIB catalysts are tailor-made products for meeting the special requirements of the following types of chemical reactions:

1. ESTERISATION



2. TRANSESTERISATION / POLYCONDENSATION



3. URETHANE FORMATION



4. CONDENSATION OF SILANES / SILICONES



What all of the reactions shown have in common is that they are catalysed by Lewis acids. Many metals exhibit Lewis acid properties. Most TIB catalysts are based on tin, bismuth, zinc or sulphonic acids.

The catalysts listed on the following pages include a wide range of Lewis acids of different strengths. They let you find the one with the most appropriate activity for a given reaction profile.



∴ TIB KAT[®] – THE RIGHT SOLUTION FOR EVERY REQUIREMENT

With the existing portfolio of TIB KAT[®] types the possibilities of current applications and properties are far from exhausted

Our research and development activities and intensive collaboration with customers give rise to a steady stream of new, effective combinations and modifications for specific catalyst applications.

Our expertise and many years of experience superbly qualify us to support you, as our customer, in developing new applications of your own.



INORGANIC TIN CATALYSTS

TIB KAT 129	Stannous octoate
TIB KAT P 129	TK 129 plasticiser blend
TIB KAT 160	Stannous oxalate
TIB KAT 162	Stannous chloride, anhydrous
TIB KAT 188	Stannous oxide
TIB Blend 98	SnCl ₂ dihydrate on silica vehicle

ORGANOTIN CATALYSTS

TIB KAT 208	Diocetyl tin di-(2-ethylhexanoate) sol.
TIB KAT 214	Diocetyl tin dithioglycolate
TIB KAT 216	Diocetyl tin dilaurate (DOTL)
TIB KAT 217	Diocetyl tin oxide blend
TIB KAT 218	Dibutyl tin dilaurate (DBTL)
TIB KAT P 218	DBTL-plasticiser blend
TIB KAT 220	Monobutyl tin tris-(2-ethylhexanoate)
TIB KAT 223	Diocetyl tin dioneodecanoate
TIB KAT 226	Dibutyl tin dioneodecanoate
TIB KAT 226 V80	TK 226-VTMO blend
TIB KAT 229	Diocetyl tin diacetate (DOTA)
TIB KAT 232	Diocetyl tin oxide (DOTO)
TIB KAT 233	Dibutyl tin diacetate (DBTA)
TIB KAT 233 S	Modified dibutyl tin diacetate (DBTA)
TIB KAT 248	Dibutyl tin oxide (DBTO)
TIB KAT 248 LC	Dibutyl tin oxide, special (DBTO)
TIB KAT 250	Monobutyl tin dihydroxychloride
TIB KAT 251	Organotin oxide
TIB KAT 256	Monobutyl tin oxide (MBTO)
TIB KAT 318	Diocetyl tin dicarboxylate
TIB KAT 320	Diocetyl tin carboxylate
TIB KAT 324	Diocetyl tin stannoxane
TIB KAT 405	TIB KAT 218-silane blend
TIB KAT 410	TIB KAT 232-plasticiser blend
TIB KAT 417	Diocetyl tin oxide blend
TIB KAT 422	Diocetyl tin-silane blend
TIB KAT 423	Diocetyl tin-silane blend
TIB KAT 424	TIB KAT 248-plasticiser blend

MONOMERS & ADDITIVES

TIB A0A / AOA 2	Antioxidant
TIB Si 2000	OH-fct., activ. polydimethylsiloxane
TIB SnS2	Lubricant additive

BISMUTH - BASED CATALYSTS

TIB KAT 716	Bismuth carboxylate
TIB KAT 716 LA	Bismuth carboxylate
TIB KAT 716 XLA	Bismuth carboxylate
TIB KAT 718	Modified bismuth catalyst
TIB KAT 720	Bismuth carboxylate
TIB KAT 789	Bismuth oxide

SULPHONIC ACID CATALYSTS

TIB KAT MSA 70	Methanesulphonic acid 70 %
TIB KAT MSA 99	Methanesulphonic acid 99 %
TIB KAT SP	Modified methanesulphonic acid
TIB KAT MP	Blocked methanesulphonic acid
TIB KAT HES 70	Hydroxyethanic acid 70 %
TIB KAT SSSA	Na-sulposuccinate
TIB KAT S40	Sulphosuccinic acid 40 %
TIB KAT S70	Sulphosuccinic acid 70 %

ZINC - BASED CATALYSTS

TIB KAT 616	Zinc neodecanoate
TIB KAT 620	Zinc octoate
TIB KAT 623	Zinc acetylacetonate
TIB KAT 634	Zinc oxalate
TIB KAT 635	Zinc acetate

METAL CO - CATALYSTS & DRYERS

TIB KAT K15	Potassium octoate / DEG
TIB KAT 804	Copper oleate
TIB KAT 808	Copper naphthenate
TIB KAT 812	Cer octoate
TIB KAT 815	Iron acetylacetonate
TIB KAT 816	Zirconium octoate

FILTERING AIDS & ADSORPTION MATERIALS

TIB Tinex P	Natural aluminosilicate
TIB Tinex T	Synthetic amorphous silicic acid





☼☼ TIB KAT[®] FOR OLEOCHEMISTRY

Sustainability: oleochemicals are closely tied to this concept. These chemicals based on renewable raw materials are playing an increasingly important role in our lives today.

The quality of oleochemical esters is greatly influenced by the TIB KAT[®] catalysts used to produce them. Our organotin-based catalysts as well as tin- and zinc-based inorganic and sulphonic acid catalysts are widely used for transesterification.

TIB KAT[®] catalysts let you achieve especially high reaction activity and yields. The resulting products contain extremely low by-product concentrations and are visually very attractive.



	Plasticisers: DOP, DOA, DINP	Plasticisers: DBP	Polymeric plasticisers	Cosmetic esters	Lubricant esters	Ester surfactants	Fatty acid esters	Solvent esters	Acrylic acid esters	
TIB KAT 129	●	○	○	●	●	●	●	○	○	Liquid, easy dosing
TIB KAT 160	●	○	●	●	●	●	●	○	○	High activity, easy to remove, wide range of uses
TIB KAT 188	●	○	○	●	●	●	●	○	○	High activity, easy to remove
TIB KAT 220	●	○	●	○	●	○	●	○	○	Liquid, very active catalyst
TIB KAT 248	●	○	●	○	●	●	●	○	○	Wide range of uses, remains dissolved in ester
TIB KAT 256	●	○	●	○	●	●	●	○	○	High activity, remains dissolved in ester
TIB KAT 634	○	○	○	●	●	●	●	○	○	Tin-free catalyst, easy to remove
TIB KAT 635	○	○	○	●	●	●	●	○	○	Tin-free catalyst, easy to remove
TIB KAT MSA	○	●	○	●	●	○	○	●	●	For low reaction temperatures
TIB KAT SP	○	●	○	●	●	○	●	●	●	For low reaction temperatures, good final product colours, easy to remove
TIB KAT HES	○	○	○	●	○	○	●	●	●	For moderate to high reaction temperatures
TIB KAT 570	○	○	○	●	○	○	●	○	●	For moderate to high reaction temperatures

ESTERISATION PRODUCTS

	Cosmetic esters	Lubricant esters	Ester surfactants	Fatty acid esters	Acrylic acid esters	
TIB KAT 229	●	○	○	●	●	Liquid catalyst based on octyltin
TIB KAT 232	●	●	●	●	○	Octyltin-based catalyst with wide range of uses, with more favourable toxicological profile than TIB KAT 248
TIB KAT 233 / 233 S	●	●	●	●	●	Liquid catalyst, highly active, soluble in ester
TIB KAT 248	○	●	●	●	●	Wide range of uses, soluble in ester
TIB KAT 256	●	●	●	●	○	Highly active catalyst, soluble in ester

TRANSESTERISATION PRODUCTS

	Inorganic zinc catalysts	Organotin catalysts	Zinc catalysts	Titanates	Sulphonic acids	Metal soaps	
TINEX T	●	○	●	○	○	●	Usable at up to 120 °C
TINEX P	●	○	●	●	○	●	Versatile use at up to 120 °C for medium- and low-viscosity esters, can be activated with water or phosphoric acid

CATALYST REMOVAL





❖❖ TIB KAT® FOR BINDERS

The complex properties of modern coatings are largely determined by the binders they contain. Besides influencing the attributes of the resins, binders also affect usability. The use of high-quality binders also permits the manufacture of paints and coatings which are able to withstand a variety of environmental conditions.

Catalysts play a crucial role in efficiently producing different types of resins. Highly selective TIB KAT® catalysts also contribute to creating customer-specific polyester, alkyd, polyurethane and silicone resins.

The quality of a catalyst depends on its catalytic activity, but also on various other factors. TIB KAT® stands for effective catalysts which help minimise unwanted by-products while improving the colour of the final product and preventing turbidity.



	Liquid saturated polyesters	Polyester resins	Polyester polyols	Polycaprolactones	Polycarbonates	Poly lactides	PET glycolysis	
TIB KAT 129	●	○	○	●	○	●	○	Liquid catalyst, high esterisation activity
TIB KAT 160	○	●	○	○	○	○	○	High activity
TIB KAT 162	○	○	●	○	○	○	○	Lower residual polyol activity than with isocyanates
TIB KAT 220	●	●	○	○	○	●	○	Liquid catalyst, very active
TIB KAT 232	●	●	○	○	○	○	○	Low toxicity
TIB KAT 248 / 248 LC	●	●	○	○	●	○	○	Wide range of uses, suitable for polyesters with low and medium molecular weights
TIB KAT 250	●	●	○	○	○	○	○	Low start temperatures (160 °C), high activity
TIB KAT 256	●	●	○	○	○	○	●	Extremely efficient catalyst, especially for polyesters with low and medium molecular weights
TIB KAT 634	○	○	○	○	○	○	●	Particularly cost-effective
TIB KAT 635	●	●	●	○	○	○	●	Tin-free catalyst, soluble in ester

POLYESTER RESINS

	Short-oil alkyds	Medium-oil alkyds	Long-oil alkyds	Urethane-modified alkyds	Silicone-modified alkyds	Water-reducible alkyd resins	
TIB KAT 129	○	○	○	●	○	○	High activity for esterisation and urethanisation
TIB KAT 216	●	●	●	●	●	○	Wide range of uses, low toxicity
TIB KAT 218	●	●	●	●	●	○	Liquid, wide range of uses
TIB KAT 248 / 248 LC	●	●	●	●	●	●	Wide range of uses, causes only minimal turbidity with soy oils
TIB KAT 250	●	●	○	○	○	○	Very good substitute for lead oxide
TIB KAT 251	●	●	○	○	●	●	Does not change drying times of air-drying alkyds
TIB KAT 256	●	●	○	○	●	●	Very good substitute for lead oxide, excellent for IPA- and TA-based formulations
TIB KAT 616	○	○	○	●	○	○	Tin-free alternative for urethanisation
TIB KAT 635	○	●	●	○	○	○	Good colours, especially with medium- and long- oil alkyds
TIB KAT 716	○	○	○	●	○	○	Tin-free alternative for urethanisation

ALKYD RESINS

	Polyester synthesis, two-stage process	Polyester synthesis, single-stage process	Polymerisation catalyst	Stabiliser, polymerisation regulator	
TIB KAT 129	○	●	○	○	High esterisation activity
TIB KAT 248 / 248 LC	●	●	○	○	Wide range of uses
TIB KAT 250	●	●	○	○	Very effective for IPA- based formulations
TIB KAT 256	●	●	○	○	Very effective for IPA- based formulations
TIB KAT K15	○	○	●	○	Substitute for cobalt octoate, enables low colour values
TIB KAT 804	○	○	○	●	Very good stabiliser, effective in low concentrations
TIB KAT 808	○	○	○	●	Very good stabiliser, effective in low concentrations

UNSATURATED POLYESTERS

	Polyesters	Alkyd resins	Formulations	
TIB A0A / A0A 2	●	●	○	Antioxidant for polyesters / alkyd resin synthesis
TIB KAT SSSA	●	●	○	Monomer for alkyd and polyester resins, no amines required
TIB Si 2000	●	●	●	Activated polyol for making silicone-modified resins

MONOMERS & ADDITIVES





❖❖ TIB KAT® FOR PAINTS AND COATINGS

Modern paints and coatings have to meet diverse requirements – and so do the catalysts used to produce them.

Automotive paints have to satisfy enormous aesthetic demands. And both they and the paints used on buildings and for industrial applications need to be weather- and UV-resistant. Long life is essential, as is the ability to withstand heat, cold, ice and snow.

As the expectations that these products have to meet have increased, so have the requirements for catalysts. The utilisation and curing times of paints and coatings are determined by the catalysts used to make them. The TIB KAT® types meet these requirements, in addition to providing other benefits. For example, the TIB KAT® range includes not only high-quality zinc-based catalysts, but also newly developed bismuth- and zinc-based catalysts which have a lower toxicological potential, thus making them suitable for a wider spectrum of applications.



Blocked PU powder coatings
 Urethane-blocked PU powder coatings
 Silicone powder coatings

POWDER COATINGS

TIB KAT P 129	●	○	○	TIB KAT 129 on special silica vehicle
TIB KAT P 216	●	○	○	Low toxicity, TIB KAT P 218 on special silica vehicle
TIB KAT P 218	●	○	○	TIB KAT 281 on special silica vehicle
TIB KAT 623	●	●	●	Tin-free catalyst, reduces crosslinking temperatures

Air-drying alkyd resins
 UPE

DRYERS / ADDITIVES

TIB KAT 616 / 620	●	○	Improves drying
TIB KAT 808	○	●	Excellent stabilizer, also effective in low concentrations
TIB KAT 812	●	○	Especially suited for lower temperatures and high ambient humidity
TIB KAT 816	●	○	The foremost lead substitute

PU prepolymers
 1K / 2K PU solvent-containing systems
 PU high solids
 2K water-borne PU systems
 Isocyanates
 Electrophoretic coatings
 PU dispersions

POLYURETHANE

TIB KAT 129	●	●	●	○	○	○	○	High activity
TIB KAT 214	○	●	○	○	○	○	○	Low toxicity, long pot life
TIB KAT 216	●	●	●	●	○	○	●	Low toxicity, standard catalyst
TIB KAT 218	●	●	●	●	○	○	●	Wide range of uses
TIB KAT 220	○	●	●	○	○	○	○	Long pot life, recommended for forced drying
TIB KAT 233	○	●	●	○	○	○	○	Very fast-acting catalyst
TIB KAT 248 LC	○	○	○	○	○	●	○	Standard catalyst
TIB KAT 318	●	●	○	○	○	○	○	Low toxicity, improved shelf life
TIB KAT 616	●	●	○	○	○	○	○	Long pot life, recommended for forced drying
TIB KAT 620	●	○	○	○	○	○	○	Standard type, for long processing and drying times
TIB KAT 716 / 716 LA	●	●	●	○	○	○	○	High activity, improved shelf life and colourfastness, alternative to DBTL
TIB KAT 718	●	●	●	○	○	○	○	Catalyst blend, recommended for aromatic systems
TIB KAT 720	●	●	●	○	○	○	○	Standard catalyst, good for elastomer systems
TIB KAT 815	○	●	○	○	○	○	○	Only for systems in which colour plays no role
TIB KAT K15	○	○	○	○	●	○	○	Standard trimerisation catalyst





❖❖ TIB KAT® FOR ADHESIVES AND SEALANTS

Modern adhesives and sealants are now indispensable in a vast range of applications spanning nearly all sectors of industry. Long ago they began replacing screws, bolts, rivets and other mechanical fasteners for a multitude of uses.

Adhesives and sealants are employed in automotive manufacturing and the aerospace industry, as well as in building construction and shipbuilding. They need to be flexible and easy to apply, and have to provide lasting protection against environmental conditions.

We have developed and optimised special TIB KAT® types for a wide spectrum of applications. They decisively improve the usability and other attributes of adhesives and sealants.

Supplementing the widely used standard catalysts, TIB has developed corresponding dioctyltin catalysts with reduced toxicity. For MS- and silane-terminated polymers, we offer special silane blends which meet the demanding requirements of these modern systems.



SILICONES & SILANE - MODIFIED POLYMERS

	1K MS silyl	2K MS silyl	Silicone resins	Silane-modified polyolefines (XPE)	Silane-terminated polymers	
TIB KAT 129	●	○	○	○	○	Slow crosslinking catalyst
TIB KAT 216	○	○	○	●	●	Low toxicity, standard catalyst for XPE tubing and pipes
TIB KAT 217	●	○	○	○	○	Enables low adhesion values, slow catalyst for MS silyl systems
TIB KAT 218	○	○	●	●	●	Multipurpose catalyst
TIB KAT 223	●	○	○	○	○	Low toxicity, excellent for 1K MS silyl
TIB KAT 324	○	●	●	●	○	Greater activity than DBTL
TIB KAT 226	●	○	○	○	○	Very fast-acting catalyst, excellent for 1 K MS silyl formulations
TIB KAT 226 V80	●	○	○	○	○	Remains liquid at lower processing temperatures for 1 K MS silyl
TIB KAT 229	○	○	●	○	●	Low toxicity, DOT alternative to TIB KAT 233
TIB KAT 233 / 233 S	○	○	●	○	●	Greater activity than DBTL
TIB KAT 417	●	○	○	○	○	Enables low adhesion values, faster than TIB KAT 217

POLYURETHANES

	PU adhesives and sealants	PU hot melts	PU cast resin systems	PU flooring	PU elastomers	
TIB KAT 129	●	○	○	○	○	Organotin-free catalyst
TIB KAT 214	●	○	○	●	○	Low toxicity, especially suited for flooring systems
TIB KAT 216	●	●	●	○	○	Low toxicity, standard catalyst
TIB KAT 218	●	●	●	●	○	Multipurpose catalyst
TIB KAT 220	○	○	○	○	●	Monobutyltin-based catalyst
TIB KAT 229	●	○	●	○	○	Low toxicity, DOT alternative to TIB KAT 233
TIB KAT 233	●	○	●	○	○	Very fast-acting catalyst
TIB KAT 318	●	●	●	○	○	Low toxicity, improved shelf life
TIB KAT 320	●	○	○	○	○	Improved shelf life
TIB KAT 616	●	○	●	●	○	Tin-based alternative to DBTL
TIB KAT 716 / 716 LA	●	○	●	●	●	Bismuth-based alternative to DBTL
TIB KAT 718	●	○	●	●	●	Tin-free catalyst
TIB KAT 720	●	○	●	●	○	Bismuth-based alternative to DBTL

RTV SILICONES

	RTV sealants, acetoxy curing	RTV sealants, oxime curing	RTV sealants, alkoxy curing	Cast resin systems	
TIB KAT 129	●	○	○	●	Very fast-acting catalyst
TIB KAT 216	●	○	○	●	Low toxicity
TIB KAT 217	○	●	●	○	Standard catalyst for oxime- and alkoxy-curing RTV systems
TIB KAT 218	●	●	○	●	Multipurpose catalyst
TIB KAT 229	●	●	○	●	DOT version of TIB KAT 233
TIB KAT 233	●	●	○	●	Very fast-acting catalyst
TIB KAT 320	●	●	○	●	Improved shelf life
TIB KAT 324	●	●	○	●	Greater activity than TIB KAT 216
TIB KAT 405	○	○	○	●	Catalyst-silane blend
TIB KAT 410	○	●	●	○	Catalyst-plasticiser blend
TIB KAT 417	○	●	●	○	Greater activity than TIB KAT 217





❖❖ TIB KAT® FOR POLYMER PROCESSING

Plastics processing calls for considerable expertise and high-quality additives.

The additives that go into many plastic compounds are indispensable ingredients – they serve to stabilise, colour or extend the properties of the polymers.

TIB offers selected additives which are tailor-made to meet the special requirements of plastics processing. For producing thermoplastic vulcanisates, example, we offer TIB Blend 98, a cross-linking catalyst based on tin(II)chloride which exhibits excellent flowability and a low tendency to clump. This translates into easy dispensing and problem-free operation of production equipment.



PVC	ABS, ABS / PVC blends	Silane-terminated polymers	Thermoplastic vulcanisates (TPV)	Thermoplastic polyurethanes	Poly(lactides)	Other polymers
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POLYMER PROCESSING

TIB BLEND 98	○	○	○	●	○	○	○	Crosslinking catalyst as free-flowing, nonclumping powder which is easy to dose
TIB KAT 129	○	○	○	○	○	●	○	Polymerisation catalyst for delactides or ring-opening polymerisation of lactones
TIB KAT 162	○	○	○	●	○	○	○	Crosslinking catalyst for EPDM / PP / phenolic resin systems
TIB KAT 214	●	○	○	○	○	○	○	Octyltin mercaptide, excellent stability when exposed to light and heat
TIB KAT 216	●	○	●	○	●	○	○	Organotin carboxylate, good light stability in PVC, excellent crosslinking catalyst in silane-terminated polyolifines, low toxicity
TIB KAT 218	●	○	●	○	●	○	○	Organotin carboxylate, good light stability in PVC, excellent crosslinking catalyst in silane-terminated polyolifines
TIB KAT 220	○	○	○	○	○	●	○	Catalyst for transesterisation of lactides
TIB KAT 616	●	○	○	○	○	○	○	Zinc-based heat stabilizer for Ca- and Zn-based stabiliser formulations
TIB KAT 620	●	○	○	○	○	○	○	Zinc-based heat stabilizer for Ca- and Zn-based stabiliser formulations
TIB KAT 716	○	○	○	○	●	○	○	Especially favourable toxicology, good crosslinking properties
TIB KAT 720	○	○	○	○	●	○	○	Bismuth-based catalyst, low toxicity



⌘ TIB KAT® – GLOBAL PRESENCE



PRODUCTION LOCATION



Sale





Europe

- | | | |
|----------------|---------|----------------|
| Benelux | Finland | France |
| United Kingdom | Italy | Spain |
| Switzerland | Greece | Norway |
| Sweden | Denmark | Poland |
| Portugal | Russia | Czech Republic |



⚡ TIB KAT[®] – REGULATORY STATUS

EU
EINECS / ELINCS
USA
TSCA
Canada
DSL / NDSL
Australien
AICS
Philippinen
PICCS
Japan
ENCS / MITI
New Zealand
ERMA
South Korea
ECL / TCCL
China
NEPA / IECSC

INORGANIC TIN CATALYSTS

Catalyst	EU	USA	Canada	Australien	Philippinen	Japan	New Zealand	South Korea	China
TIB KAT 129	●	●	●	●	●	●	●	●	●
TIB KAT P 129	●	●	●	●	●	●	●	●	●
TIB KAT 160	●	●	●	●	○	●	●	●	●
TIB KAT 162	●	●	●	●	●	●	●	●	●
TIB KAT 188	●	●	●	●	●	●	●	●	●

EU
EINECS / ELINCS
USA
TSCA
Canada
DSL / NDSL
Australien
AICS
Philippinen
PICCS
Japan
ENCS / MITI
New Zealand
ERMA
South Korea
ECL / TCCL
China
NEPA / IECSC

ORGANOTIN CATALYSTS

Catalyst	EU	USA	Canada	Australien	Philippinen	Japan	New Zealand	South Korea	China
TIB KAT 208	●	○	○	●	○	●	●	○	○
TIB KAT 214	●	●	●	●	●	●	●	●	●
TIB KAT 216	●	●	●	●	●	●	●	●	●
TIB KAT 217	●	●	●	●	●	●	○	●	●
TIB KAT 218	●	●	●	●	●	●	●	●	●
TIB KAT P 218	●	●	●	●	●	●	●	●	●
TIB KAT 220	●	●	●	●	●	●	●	●	●
TIB KAT 223	●	○	○	○	○	○	○	○	○
TIB KAT 226	●	●	●	●	●	●	●	●	●
TIB KAT 226 V80	●	●	●	●	●	●	●	●	●
TIB KAT 229	●	●	●	○	●	○	○	○	●
TIB KAT 232	●	●	●	●	●	●	○	●	●
TIB KAT 233	●	●	●	●	●	○	●	●	●
TIB KAT 233 S	●	●	●	●	○	○	●	●	●
TIB KAT 248	●	●	●	●	●	●	●	●	●
TIB KAT 248 LC	●	●	●	●	●	●	●	●	●
TIB KAT 250	●	●	●	●	○	○	●	●	●
TIB KAT 251	●	●	●	●	●	●	●	●	●
TIB KAT 256	●	●	●	●	●	●	●	●	●
TIB KAT 318	●	●	●	●	●	○	●	●	●
TIB KAT 320	●	○	○	●	○	●	●	○	○
TIB KAT 324	○	○	○	○	○	○	○	○	○
TIB KAT 405	●	●	●	●	●	●	●	●	●
TIB KAT 410	●	●	●	●	●	●	○	●	●
TIB KAT 417	●	●	●	●	●	●	○	●	●
TIB KAT 422	●	○	○	●	○	○	○	○	○
TIB KAT 423	●	●	●	●	●	●	●	●	●
TIB KAT 424	●	●	●	●	●	●	●	●	●



EU
EINECS / ELINCS

USA
TSCA

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DSL / NDSL

Australien
AICS

Philippines
PICCS

Japan
ENCS / MITI

New Zealand
ERMA

South Korea
ECL / TCCL

China
NEPA / IECSC

ZINC - BASED CATALYSTS

TIB KAT 616	●	●	●	●	●	●	●	●	●
TIB KAT 620	●	○	●	●	●	○	●	●	●
TIB KAT 623	●	●	●	●	●	●	●	●	●
TIB KAT 634	●	●	●	●	○	○	○	●	○
TIB KAT 635	●	●	●	●	●	●	●	●	●

BISMUTH - BASED CATALYSTS

TIB KAT 716	●	●	●	●	●	○	●	●	●
TIB KAT 716 LA	●	●	●	●	●	○	●	●	●
TIB KAT 716 XLA	●	●	●	●	●	○	●	●	●
TIB KAT 718	●	●	●	●	●	○	●	●	●
TIB KAT 720	●	●	●	●	●	●	●	●	●
TIB KAT 789	●	●	●	●	●	●	●	●	●

METAL CO - CATALYSTS & DRYERS

TIB KAT K15	●	●	●	●	●	●	●	●	●
TIB KAT 804	○	○	○	●	●	○	○	●	●
TIB KAT 808	●	●	●	●	●	○	●	●	●
TIB KAT 812	●	●	●	●	●	●	●	●	●
TIB KAT 815	●	●	●	●	●	●	●	●	●
TIB KAT 816	●	●	●	●	○	●	●	●	●

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China
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SULPHONIC ACID CATALYSTS

TIB KAT MSA	●	●	●	●	●	●	●	●	●
TIB KAT SP	●	●	●	●	●	●	●	●	●
TIB KAT MP	●	●	●	●	●	●	●	●	●
TIB KAT HES	●	●	●	○	●	●	●	●	●
TIB KAT SSSA	●	●	●	○	○	●	●	○	○
TIB KAT S40	○	○	○	○	○	○	○	○	○
TIB KAT S70	●	●	●	○	●	●	●	●	●

FILTERING AIDS & ADSORPTION MATERIALS

TIB Tinex P	○	○	○	○	○	○	○	○	○
TIB Tinex T	●	●	●	●	●	●	●	●	●

MONOMERS & ADDITIVES

TIB A0A	○	○	○	●	●	○	●	○	●
TIB A0A2	●	●	●	●	●	●	●	●	●
TIB SnS2	●	●	●	○	○	●	●	●	●





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