



umicore

PU Metal Catalysts
Umicore
Specialty Materials Brugge



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UMICORE SPECIALTY MATERIALS BRUGES (USMB) HAS MORE THAN 60 YEARS OF EXPERIENCE IN THE PRODUCTION OF CATALYSTS FOR VARIOUS APPLICATIONS. SUBSIDIARY OF UMICORE GROUP, WHICH EMPLOYS AROUND 11,000 PEOPLE WORLDWIDE, IT IS LOCATED IN THE WEST OF BELGIUM, NEAR THE SEAPORTS OF ANTWERP AND ZEEBRUGGE.

USMB emphasizes working with an international team of well qualified chemists with many years of experience in the polyurethane, coating, catalyst, lubricant and tire industry. USMB is a fully integrated business unit consisting of production, logistical, R&D, Quality, EHS, marketing and sales services. The operational department has more than 10 multi-purpose production lines and has room for expansion.

USMB strives to implement sustainable and renewable raw materials into its product range, putting great importance on their global environmental impact. Our Valikat catalysts, cobalt alternatives, alkyds and esters fit perfectly in this vision.

For many years, our special attention to quality and to continuous improvement in our technology have ensured a reliable and competitive product range, making USMB the ideal partner for your high-quality customized catalysts.

USMB holds the ISO 9001: 2015 and ISO14001: 2015 quality system certificates, and applies several other standards applicable in multiple industries. Only the highest product quality is good enough for our customers, and our production methods are carefully described in procedures, which are audited regularly by many of our customers.



USMB is a modern and versatile factory, with highly automated facilities. It is equipped with a computerized Warehousing Management System (WMS) that guides the Production Department in planning, assists the Logistics operators in picking and sending the right material to the right customer, and ensures the proper stock rotation. It is based on a powerful database and a wireless tracking system.

R&D & Product Stewardship

The R&D Department at USMB holds the capability to fine-tune the chemical composition of polyurethane catalysts to meet specifications defined by the PU industry client. These tailor-made catalysts are the best match to the client's system of polyols, isocyanates and additives.

Such developments start at the laboratory bench. After successful synthesis in the laboratory, we can up-scale in our pilot plant.

The R&D Department is equipped with a dynamic rheometer to measure the cure profile over time. This is a computer controlled instrument which monitors the process by which liquid polymers are converted to elastomeric or glassy solids. The device is capable of providing continuous cure profile data of a polyol-isocyanate reaction and performing the measurements at different temperatures.

The R&D Department uses the latest techniques such as XRF-analysis and IR-analysis to assure the purity of the catalysts.

Within Umicore there is a specific department, Materials Stewardship, that focuses on environmental and safety related issues of Umicore's processes and products: UMSB can provide its customers with independent reports that certify the absence of Substances of Very High Concern in its products.



Safety data sheets
and safety labels



Certificates



Life cycle
assessment



Follow up of changes
in regulation



REACH registration



International
regulatory compliance



Customer support related to regulatory, health and
safety aspects of our products

PU Catalysts

THE VALIKAT[®] CATALYSTS ENABLE FORMULATORS TO REPLACE TOXIC MERCURY CATALYSTS BY SUSTAINABLE AND SAFE ALTERNATIVES, MAINLY BASED ON BISMUTH AND ZINC.

THE VALIREX[®] K CATALYSTS ARE HIGH-QUALITY, HIGH-PURITY POTASSIUM-BASED CATALYST TO PROMOTE TRIMERIZATION OF ISOCYANATES. THE MAIN APPLICATION IS PRODUCTION OF PIR/ RIGID INSULATION FOAM.

Valikats[®] are used in a wide variety of applications in the polyurethane field: CASE (COATINGS, ADHESIVES, SEALANTS, ELASTOMERS), TPU, FLEXIBLE FOAM, PIR/RIGID FOAM. Our customers make a variety of products, such as car coatings, beverage cans, sports floors, window sealants, artificial leather, toys, waterproof layers, automotive seats and car interiors, thermal insulation and acoustic insulation, etc.

- Coatings
- Adhesives
- Sealants
- Elastomers

- TPU
- Flexible Foam
- Rigid foam/PIR
- and many other applications.

Product List

Bismuth Catalysts

Product	Metal Content	Typical Viscosity (mPa.s, rt)	Feature	Application
Valikat® Bi1610	16% Bi	1 700	Targeted Polyol-Isocyanate	PUD, Synthetic Leather, TPU, CPU
Valikat® Bi2010	20% Bi	7 000	Targeted Polyol-Isocyanate	PUD, Synthetic Leather, TPU, CPU
Valikat® Bi2810	28%Bi	180 000	Targeted Polyol-Isocyanate	PUD, Synthetic Leather, TPU, CPU
Valikat® Bi2010 L	20% Bi in polyol	18 000	Low VOC	Low VOC applications
Valikat® Bi2010 MB	20% Bi in polyol	8 000	Low VOC	Low VOC applications
Valikat® Bi9 HSA	9% Bi	Solid/Low T melting	Low VOC	Low VOC applications
Valikat® Bi2010 MC	10% Bi	700	Improved Hydrolytic Stability	Adhesives, TPU, CPU

Zinc Catalysts

Product	Metal Content	Typical Viscosity (mPa.s, rt)	Feature	Application
Valikat® Zn1910	19% Zn	88 000	Improved Back-End, Low VOC	Coatings, PU runway, TPU, CPU
Valirex® Zn22.5	22,5% Zn	2 800	Improved Back-End	Elastomers, TPU, CPU

Bismuth/Zinc Catalysts

Product	Metal Content	Typical Viscosity (mPa.s, rt)	Feature	Application
Valikat® ZB1001	Bi/Zn-blend	50 000	Slow to Moderate Gel Reaction, Good Back-End	Adhesives, TPU, CPU
Valikat® ZB8	Bi/Zn-Blend	3 700	Fast Gel and Curing	Adhesives, Coatings, PU finishes
Valikat® DCC 1410	Bi/Zn-Blend	2 200	Delayed Curing, Longer Pot-Life, Improved Back-End	Applications needing long open times
Valikat® DCC 4110	Bi/Zn-Blend	4 500	Delayed Curing, Longer Pot-Life, Improved Back-End	Applications needing long open times
Valikat® BiZn 120D	Bi/Zn-Blend	4 000	Delayed Curing, Longer Pot-Life, Improved Back-End	Applications needing long open times
Valikat® BiZn 14P	Bi/Zn-Blend	54 000	Moderate Gel and Curing	PU Runway
Valikat® BiZn 14H2	Bi/Zn-Blend	10	Low VOC, Ready-To-Use	PU Runway

Tin Catalysts

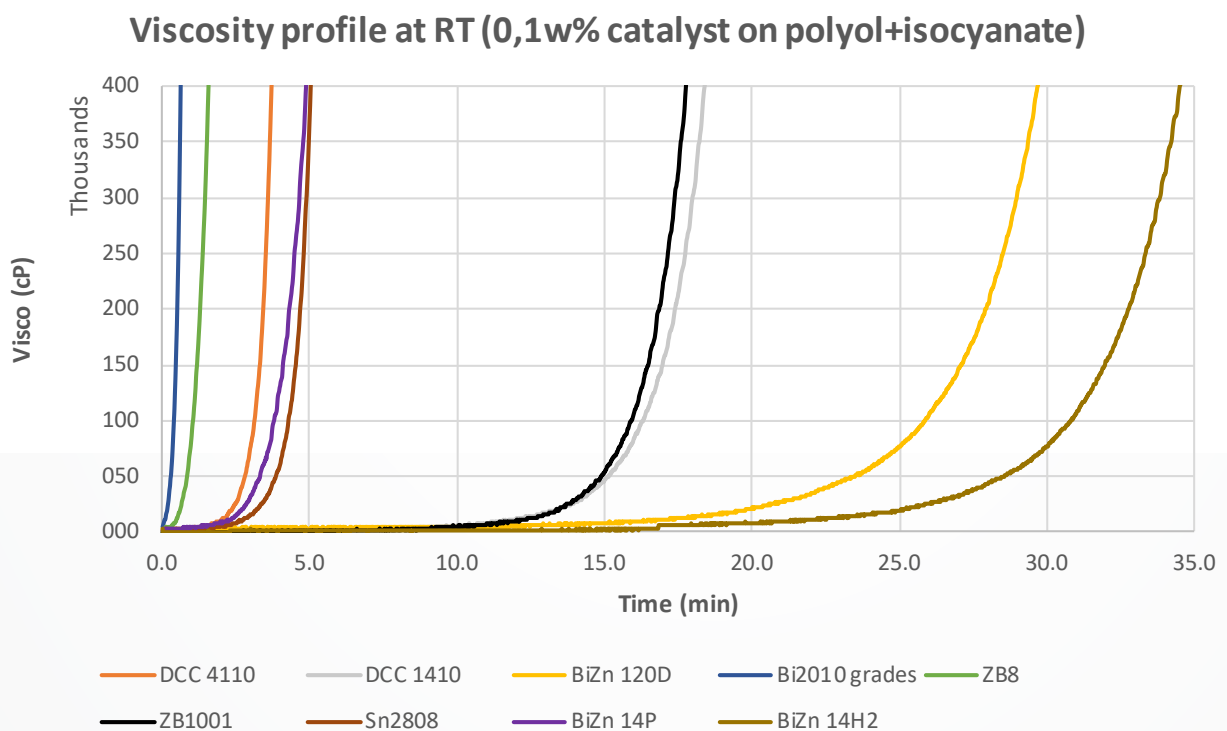
Product	Metal Content	Typical Viscosity (mPa.s, rt)	Feature	Application
Valikat® Sn2808	28% Sn	220	Higher Hydrolytic Stability	General Purpose Sn-catalyst

Potassium Catalysts

Product	Metal Content	Typical Viscosity (mPa.s, rt)	Feature	Application
Valirex® K10 DEG	10% K in DEG	250	Trimeric Catalyst, Low Color	PIR Foam, Isocyanate Trimer
Valirex® K15 DEG	15% K in DEG	5 000	Trimeric Catalyst, Low Color	PIR Foam, Isocyanate Trimer
Valirex® K15 DEG 30	15% K in DEG	2 600	Trimeric Catalyst, Low Color	PIR Foam, Isocyanate Trimer
Valirex® K15 LO	15% K in OH-free solvent	1 500	Trimeric Catalyst, reduced isocyanate consumption	PIR Foam, Isocyanate Trimer
Valirex® K16 LO	16% K in OH-free solvent	3 900	Trimeric Catalyst, reduced isocyanate consumption	PIR Foam, Isocyanate Trimer
Valirex® K16 MO	16% K in OH-free solvent	1 200	Trimeric Catalyst, reduced isocyanate consumption	PIR Foam, Isocyanate Trimer

Curing profile

The Valikat Bismuth and Tin catalysts were tested in a standard 2K PU system to compare their reactivity. Polyol Voranol CP6055 containing 0,1w% of catalyst was mixed with isocyanate Lupranate MM103 at room temperature (ISO/OH = 1,05). After thorough mixing the viscosity profile was measured with a Brookfield rheometer.



Other USMB Product Lines

USMB CAN OFFER CUSTOMERS THE FOLLOWING PRODUCT RANGES

- Valikat metal catalysts
- Cobalt alternative ECOS ND®15
- Valires/Valithane/Valithix alkyd resins
- Valirex metal carboxylates
- Naphthenic acids
- ECOS RAPs : rubber adhesion promoters
- Dispersions
- Valilube and Valiflex esters

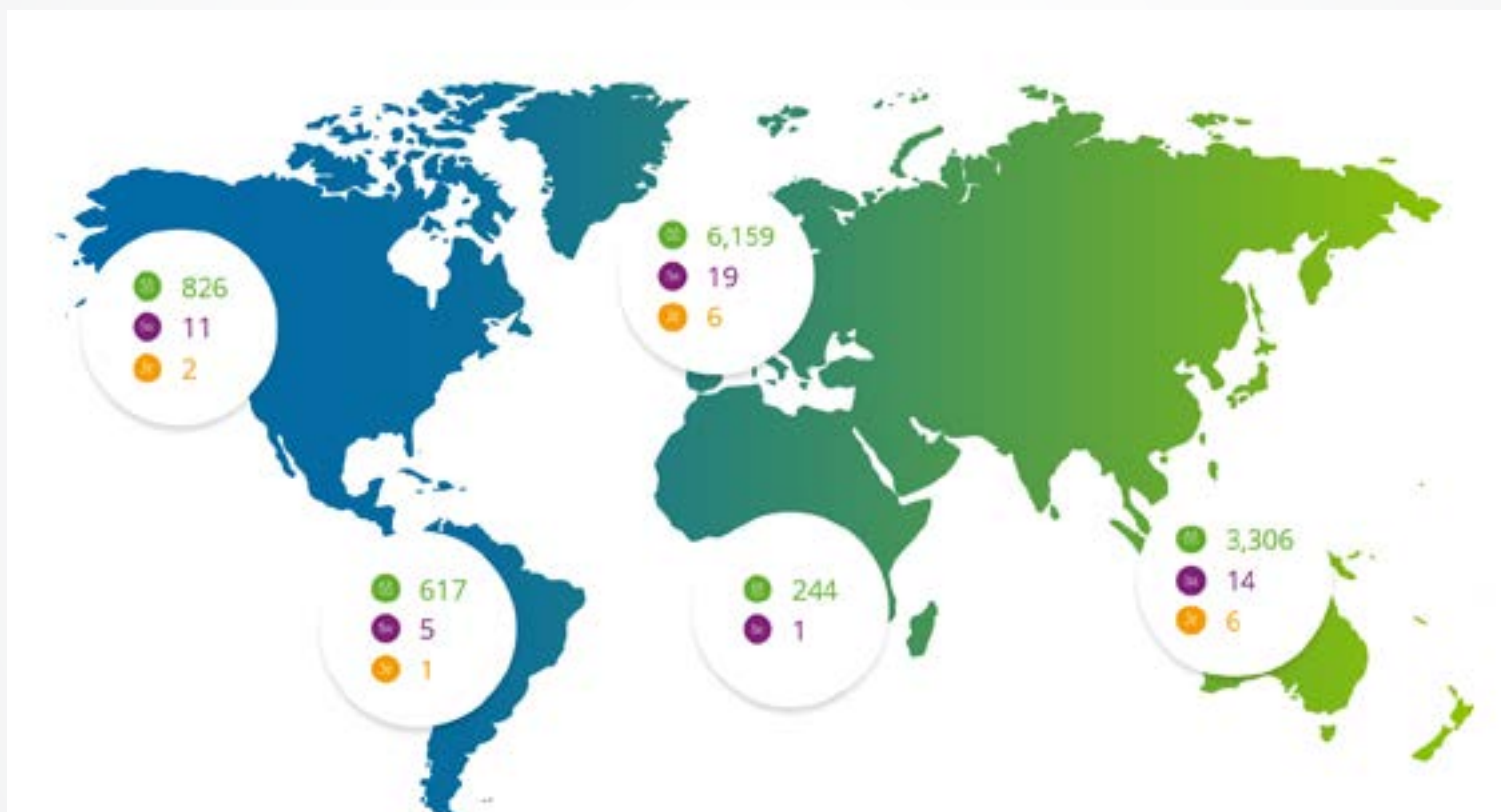
OUR PRODUCTS ARE USED IN THE PRODUCTION OF

- Polyurethane
- Paints, inks and varnishes
- Unsaturated polyester resins (UPR)
- Base chemicals
- Mineral oils, lubricants and greases
- Car tyres
- Synthetic rubbers

USMB PROVIDES TOLL MANUFACTURING SERVICE IN THE FIELDS OF

- Batch processing
- Esterification
- Polymerization
- Distillation
- Polyaddition

USMB is a part of Umicore, a Belgian multinational with factories and sales offices all over the world. Over the years, USMB has worked out a strong and knowledgeable distribution and agent network in order to serve our wide spread customers with a local presence. For further contact details of our agents/distributors worldwide, please contact us.



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For inquiries and additional information please contact

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