



FIRST CHOICE

FOR A BRIGHTER LIFE

KRONOS Slurries

Excellence in liquid white





The liquid advantage



KRONOS slurries -

The added value for your paint production.

Aqueous TiO₂ suspensions that boost your production effectiveness.

- ★ Simplifying your production
- ★ No need for dispersion
- ★ Easy handling and exact dosing
- ★ Safer working environment
- ★ High-volume throughput
- ★ Excellent batch-to-batch consistency
- ★ Less waste



The KRONOS slurries

KRONOS Slurries offer numerous key features that all result in a lean, easy and cost-efficient manufacturing process, thus boosting your competitiveness.

Our performance slurries simplify production. They eliminate the need for dispersion. Due to the now dust-free processing, any related potential health hazards are eliminated. In this way, the pigment suspensions make for a safer working environment.

KRONOS Slurries are characterised by easy handling and exact dosing. They are furthermore specially designed for high-volume throughput. Use of the slurry leads to a more constant batch-to-batch quality.

Above all, KRONOS Slurries also offer the enormous advantage of eliminating used-package disposal and the associated expense.

KRONOS 4045, KRONOS 4320 and KRONOS 4390 are aqueous rutile pigment suspensions for universal use in waterborne coatings and in the paper industry. They improve the brightness and opacity of interior emulsion paints and paper coatings and give paper very high wet and dry opacity when added directly to the pulp in the wet end. Furthermore, **KRONOS 4045** is also approved as a colourant for food packaging with indirect food contact.

KRONOS 4320 is based on our approved and reliable KRONOS 2310 pigment grade, **KRONOS 4390** on the well approved KRONOS 2190 likewise.

KRONOS offers liquid products for a new way of production for all waterborne applications such as paper/cardboard, industrial coatings and architectural coatings.





The liquid process and products





How to profit with KRONOS slurries

Improvement and stabilization of paint quality:

- Improved batch-to-batch consistency of paint production (no colour and viscosity shifts)
- Less off-spec batches
- Best hiding power and tinting strength
- Post-addition of dispersed TiO_2 is possible!

Flexibility and capacity gain:

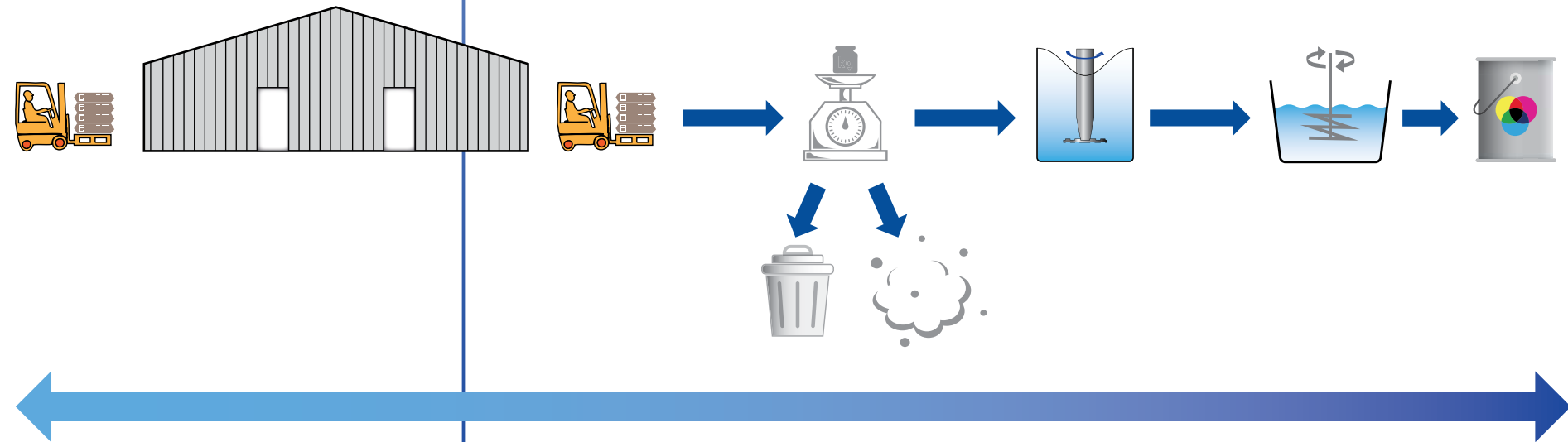
- No more limitations to plant capacity due to powder handling & dispersion
- Higher through-put leading to an increase in plant capacity
- More production flexibility allowing to react to orders at any quantity.

Improved working environment:

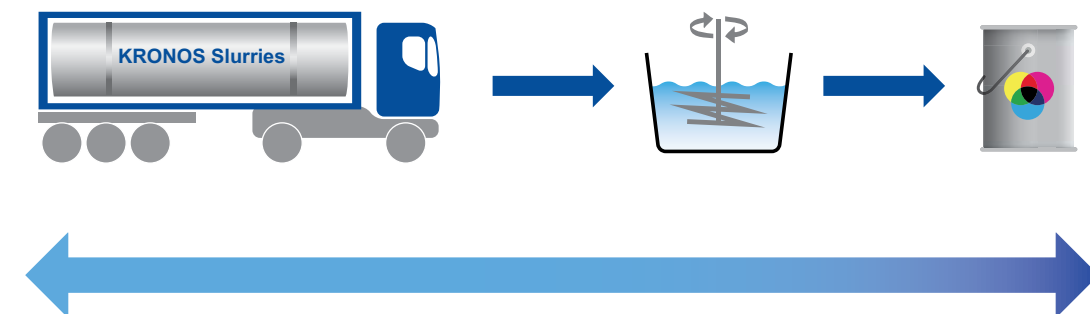
- Due to the classification of TiO_2 powder in 2021, dust extraction systems and personal protection for work-force are required. KRONOS slurries are not affected by this classification.
 - Elimination of bag handling and - disposal
 - Safe, dust-free and clean working environment in paint production.



Conventional production process



Innovative production process





The new KRONOS European slurry product portfolio

Untreated TiO ₂ Slurry for interior applications	Surface-treated TiO ₂ Slurry for exterior applications	
KRONOS 4045 FDA approved slurry based on untreated TiO ₂	Universal KRONOS 4390 based on KRONOS 2190	Premium KRONOS 4320 based on KRONOS 2310

Applications

KRONOS 4045	KRONOS 4390	KRONOS 4320
Paper mass (pulp)	Decorative coatings, interior and exterior	Premium decorative coatings, exterior
Paper and cardboard coatings	Industrial coatings	Premium industrial coatings
Interior deco paints	Wood coatings	OEM coatings
Cost-efficient primers, interior	Primers	Highly durable coatings
Applications requiring FDA/indirect food contact	Printing inks	Printing inks



Typical technical data

	KRONOS 4045	KRONOS 4390	KRONOS 4320
Solids content [%]	71.0	73.5	76.5
TiO ₂ surface treatment	none	Al, Zr	Al, Si, Zr
Weathering class	C	B	A
Production process	Sulfate	Sulfate	Chloride
Brookfield viscosity [mPas]	850	550	250
pH	8.0	8.5	8.5
Density [g/cm ³]	2.1	2.2	2.2

Key Attributes

- ★ Stable, pre-dispersed and ready-to-use
- ★ Easy to pump and exact dosing
- ★ Excellent opacity
- ★ For highest brightness and highest gloss paints
- ★ Universal compatibility with paint components & tints
- ★ Very low screen residue
- ★ Microbiological stability
- ★ Compliant with currently valid environmental regulations



Working together



KRONOS creates more than a new product portfolio - we are reliable partners in slurry technology

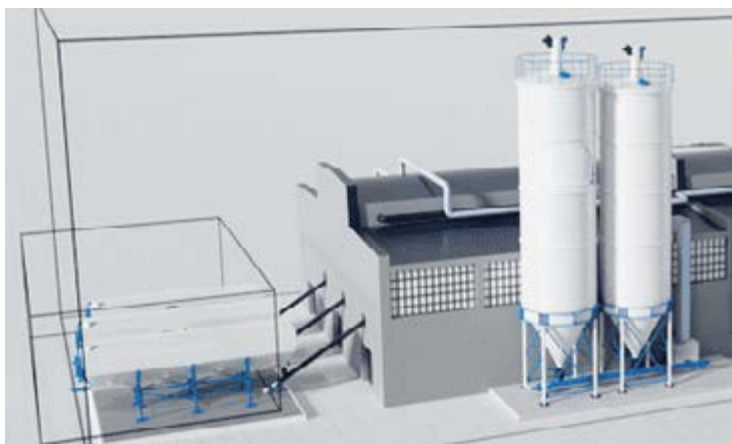
KRONOS is providing forward integrated solutions to the paint, paper and building materials industry according to the specialized customer requirements.

For safety of supply, we offer a commercial long-term agreement with slurry deliveries. For our customers we offer our engineering know-how on request (for production implementation

of slurries) as well as reliable support with formulation know-how (e.g. biocide protection).

KRONOS additionally offers interested customers assistance with mobile logistics solutions (flexible storage tanks) and their handling.

The flexible storage tanks



© Omya AG

KRONOS offers quality, know-how and support for our customers

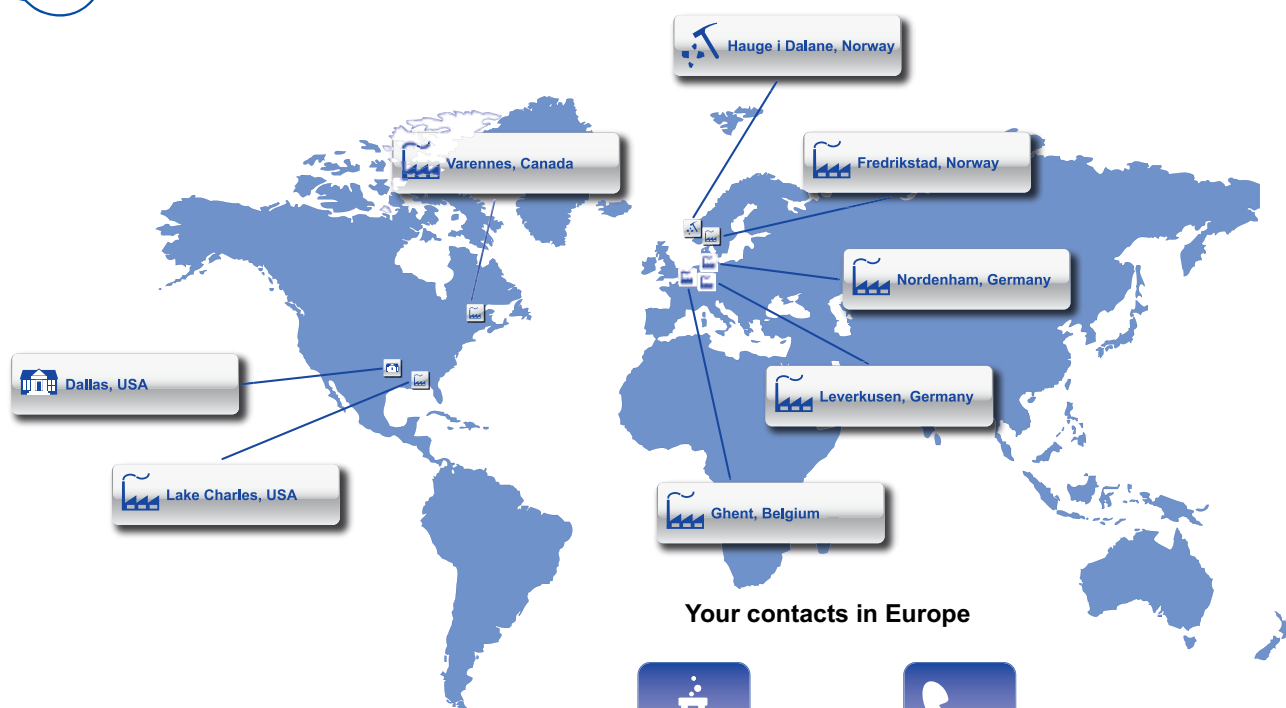
- ★ We are able to supply our slurries globally with sufficient production capacity
- ★ We offer long-term agreements to our customers for safety of supply
- ★ We offer extensive technical support by
 - Engineering / implementation on a plant level
 - Formulations / implementation in coating formulations
- ★ We can adapt formulation details





FIRST CHOICE

FOR A BRIGHTER LIFE



Your contacts in Europe



Technical Service
Leverkusen, Germany
+49 214 356-0



Customer Service
Leverkusen, Germany
+49 214 356-0

KRONOS Worldwide

The KRONOS group is one of the world's leading manufacturers of titanium dioxide and has been operating as an international company for more than a 100 years.

KRONOS manufacturing sites are located in five countries on two continents, with European sites at Leverkusen and Nordenham/Germany, Fredrikstad/Norway and Ghent/Belgium, and North American sites at Lake Charles, Louisiana/USA, and Varennes, Quebec/Canada.

The current annual production capacity is approximately 550,000 tonnes TiO_2 . The company has its own ilmenite mine in Hauge i Dalane/Norway, a key raw material in the sulphate process.

Our manufacturing sites are certified according to ISO 9001, and partly according to ISO 14001, ISO 50001 and other site-specific requirements. Our most recent ISO certificates are provided for download on the KRONOS website.

KRONOS INTERNATIONAL, Inc.

Peschstrasse 5
51373 Leverkusen, Germany
Tel. +49 214 356-0
kronos.international@kronosww.com
kronos.sales.leverkusen@kronosww.com

www.kronostio2.com

The information contained herein only applies to the specified KRONOS product and is, to the best of our current knowledge and experience (including our reliance on legislation in effect as of the date hereof and information from third parties), true and accurate. The provision of this information does not warrant or guarantee compliance with any regulation or legislation and does not establish any contractual rights between KRONOS and the recipient.



KRONOS®

DS2437EN/221EN