We have supplied the coatings industry for many years with a wide range of high-quality intermediates for the production of modern coatings. Binders, crosslinking agents and reactive diluents as well as solvents and additives form part of our portfolio. Our integrated global production and logistics network enables us to supply our customers around the world flexibly and reliably. We are able to support the entire range of our customers at all stages of the coatings value chain.

In close cooperation with our customers, we also develop new intermediates that are specifically aligned to the needs of the coatings industry. We support the development of new businesses and contribute to the improvement of existing formulations. Intensive communication with our customers forms the basis of our work.

We continuously expand our expertise especially for the coatings industry, acquiring specific knowledge in this field. In the future we intend to support and promote innovations in the various business areas of the industry even more systematically and faster than ever to help our customers to keep growing profitably.

It is listening that makes the difference! By offering a wide range of innovative approaches and methods we strive for a target-oriented dialog with our customers. In this way, too, we promote our goal of helping our customers to be more successful.

Focusing on coatings industry needs, we organize professional innovation workshops, develop new products in joint projects and offer technical support.

Contact us

Please email us at:
info.intermediates@basf.com

For further information and your regional contact, please visit our website:
www.basf.de/en/intermed/industries/coatings/

Listening makes the difference!

The data contained in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, the data does not relieve processors from carrying out their own investigations and tests; neither does the data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

The safety data given in this publication is for information purposes only and does not constitute a legally binding Material Safety Data Sheet (MSDS). The relevant MSDS can be obtained upon request from your supplier or you may contact BASF directly at info.intermediates@basf.com.

2013 edition

Please email us at:
info.intermediates@basf.com

For further information and your regional contact, please visit our website:
www.basf.de/en/intermed/industries/coatings/
Solvent-borne and high-solids coatings

Solvent-borne coatings have historically demonstrated high performance in diverse coating applications. They are comprehensively used in automotive coatings, industrial coatings, and printing inks. New high-solids formulations (50%-70% solids) successfully meet regulations with regard to volatile organic compounds (VOC) regulations, customer specifications.

Solvent-borne coatings are formulated as one- or two-component systems using a variety of commercially available binders. We offer building block options to the manufacturers of alkyd and polyester resins. Vinyl ethers, with different alkyl groups, are specialty monomers for the production of PVC copolymers, and formers used as versatile binders in anti-corrosion coatings.

The curing characteristics of two-component epoxy and incorporate-based coating formulations are promoted by BASF’s Lupragen® catalysts. Specially solvents are available to increase the performance of the coatings.

<table>
<thead>
<tr>
<th>Properties</th>
<th>Distinguishing properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Ethylhexanoic acid</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Vinyl ethers</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Octadecyl vinyl ether</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Dodecyl vinyl ether</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Cyclohexyl vinyl ether</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>tert.-iso-1,3-Dioxolane</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Tetraglyme</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Ethyl Diglyme</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Proglyme</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>gamma-Butyrolactone</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Propylene carbonate S</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Ethylene carbonate S</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>N-Ethylpyrrolidone</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>N-Methylpyrrolidone</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>2-Mercaptoethanol</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>tert.-Amyl alcohol</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Capromer™ PT1-05 (polycaprolactone)</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Capromer™ PD4-05 (polycaprolactone)</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Capromer™ M (epsilon-caprolactone)</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>1,4-Cyclohexane dimethanol monovinyl ether</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Hydroxybutyl vinyl ether</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>1,3-Diaminopropane</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Ethylenediamine</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Neopentane (2,2-Dimethyl-propane-1,3-diamine)</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Neopentanediamine</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Neopentane (2,2-Dimethyl-propane-1,3-diamine)</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Propoxylated Neopentane glycol ester, HPN</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>1,4-Butanediol</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>4,4’-Methyleneedianiline</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Bismaleimide</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Benzyltriethylammonium chloride</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Benzylamine</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Hexylamine</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Diethanolamine</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Triethanolamine</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Neopentane (2,2-Dimethyl-propane-1,3-diamine)</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Neopentane (2,2-Dimethyl-propane-1,3-diamine)</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
<tr>
<td>Neopentane (2,2-Dimethyl-propane-1,3-diamine)</td>
<td>Solvent-borne and high-solids coatings</td>
</tr>
</tbody>
</table>

We offer broad expertise in a wide range of high-quality intermediates for manufacturing modern coatings. With our global reach and flexibility as well as our clear dedication to innovation we strive to meet the needs of customers in the coatings industry. Intense communication with our customers forms the basis of our work.
Focusing on coatings industry needs, we organize professional innovation workshops, develop new products in joint projects and offer technical support.

We have supplied the coatings industry for many years with a wide range of high-quality intermediates for the production of modern coatings. Binders, crosslinking agents and reactive diluents as well as solvents and additives form part of our portfolio. Our integrated global production and logistics network enables us to supply our customers around the world flexibly and reliably. We support the growth of our customers at all stages of the coatings value chain.

In close cooperation with our customers, we also develop new intermediates that are specifically adapted to the needs of the coatings industry. We support the development of new businesses and contribute to the improvement of existing formulations. Intensive communication with our customers forms the basis of our work.

We continuously expand our expertise especially for the coatings industry, acquiring specific knowledge in this field. In the future we intend to support and promote innovations in the various business areas of the industry even more systematically and faster than ever to help our customers to keep growing profitably.

It is listening that makes the difference! By offering a wide range of innovative approaches and methods we strive for a target-oriented dialogue with our customers. In this way, too, we promote our goal of helping our customers to be more successful.

Listening makes the difference!

Contact us

Please email us at:
info.intermediates@basf.com

For further information and your regional contact, please visit our website:
www.basf.de/en/intermed/industries/coatings/

The data contained in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, the data does not relieve processors from carrying out their own investigations and tests; neither does the data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

The safety data given in this publication is for information purposes only and does not constitute a legally binding Material Safety Data Sheet (MSDS). The relevant MSDS can be obtained upon request from your supplier or you may contact BASF directly at info.intermediates@basf.com.

2013 edition

Please email us at:
info.intermediates@basf.com

For further information and your regional contact, please visit our website:
www.basf.de/en/intermed/industries/coatings/
UV coatings

We offer broad expertise in a wide range of high-quality intermediates for manufacturing modern coatings. With our global reliability and flexibility as well as our clear dedication to innovation we strive to meet the needs of customers in the coatings industry.

Intensive communication with our customers forms the basis of our work.

UV-curable coating technology provides benefits in terms of good performance, environmental compatibility and processing efficiency. Liquid forms of UV-curing systems are solvent-free, require low energy for curing, and are adaptable to most conventional coating methods. Employing either radical or cationic curing mechanisms, the crosslinking of these coatings is initiated by means of UV-light.

We offer multi-functional polyol intermediates for the manufacturing of UV-curable acrylic monomers and oligomers. In addition to O-vinyl compounds (e.g., vinyl ethers) used as reactive diluents, we also offer a range of N-vinyl compounds (e.g., N-vinyl caprolactam) for UV-curable coatings.

We offer broad expertise in a wide range of high-quality intermediates for manufacturing modern coatings. With our global reliability and flexibility as well as our clear dedication to innovation we strive to meet the needs of customers in the coatings industry.

Intensive communication with our customers forms the basis of our work.

UV-curable coating technology provides benefits in terms of good performance, environmental compatibility and processing efficiency. Liquid forms of UV-curing systems are solvent-free, require low energy for curing, and are adaptable to most conventional coating methods. Employing either radical or cationic curing mechanisms, the crosslinking of these coatings is initiated by means of UV-light.

We offer multi-functional polyol intermediates for the manufacturing of UV-curable acrylic monomers and oligomers. In addition to O-vinyl compounds (e.g., vinyl ethers) used as reactive diluents, we also offer a range of N-vinyl compounds (e.g., N-vinyl caprolactam) for UV-curable coatings.
We have supplied the coatings industry for many years with a wide range of high-quality intermediates for the production of modern coatings. Binders, crosslinking agents and reactive diluents as well as solvents and additives form part of our portfolio. Our integrated global production and logistics network enables us to supply our customers around the world flexibly and reliably. With this strong backbone we support the growth of our customers at all stages of the coatings value chain.

In close cooperation with our customers, we also develop new intermediates that are specifically adapted to the needs of the coatings industry. We support the development of new businesses and contribute to the improvement of existing formulations. Intensive communication with our customers forms the basis of our work.

We continuously expand our expertise especially for the coatings industry, acquiring specific knowledge in this field. In the future we intend to support and promote innovations in the various business areas of this industry even more systematically and faster than ever to help our customers to keep growing profitably.

It is listening that makes the difference! By offering a wide range of innovative approaches and methods we strive for a target-oriented dialog with our customers. In this way, too, we promote our goal of helping our customers to be more successful.

Focusing on coatings industry needs, we organise professional innovation workshops, develop new products in joint projects and offer technical support.

Listening makes the difference!

Contact us

Please email us at:

info.intermediates@basf.com

For further information and your regional contact, please visit our website:

www.basf.de/en/intermed/industries/coatings/

The data contained in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, the data does not relieve processors from carrying out their own investigations and tests; neither does the data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

The safety data given in this publication is for information purposes only and does not constitute a legally binding Material Safety Data Sheet (MSDS). The relevant MSDS can be obtained upon request from your supplier or you may contact BASF directly at info.intermediates@basf.com.

2013 edition

Please email us at:

info.intermediates@basf.com

For further information and your regional contact, please visit our website:

www.basf.de/en/intermed/industries/coatings/
Water-borne coatings

Water-borne coatings use water as a solvent, which makes them eco-friendly and easy to apply. They are currently available for many different applications, including wood coatings, furniture coatings, plastic coatings and printing inks.

Building blocks/chemistry

For water-borne coatings are mainly polyacrylate, polyurethane, or polyurethane resins. Additionally, epoxy and alkyd resins can be formulated for water-borne coating applications.

We offer a broad range of building blocks for alkyl, polyester and polyurethane-based water-borne binders. Our water-soluble amines are used in two-component polyester and polyurethane-based water-borne binders.

Our water-soluble amines are used in two-component epoxy coatings. Our specially selected solvents and additives provide synergistic improvement in shelf-life stability, processability and performance properties in water-borne coating systems.

We offer broad expertise in a wide range of high-quality intermediates for manufacturing modern coatings. With our global reliability and flexibility as well as our tailor-made solutions and tailor-made raw materials, we meet the needs of customers in the coatings industry. Intensive communication with our customers forms the basis of our work.

Water-borne coatings

Curing technologies

- Physical drying
- Oxidative drying
- Urethanes
- Amino resins
- Epoxies
- Radiation curing
- Polyesters (including alkyds and UP resins)
- Polyurethanes
- Acrylic and vinyl polymers
- Epoxies
- Polyoxymethylene (POM)
- Reactive diluents
- Special solvents
- Additives
- Anti-corrosion
- Automotive
- General industry
- Wood
- Can and coil
- Graphic arts
- Others

Distiguished properties

We offer products in the BASF Intermediates portfolio

Vinylphosphonic acid dimethylester*
Vinylphosphonic acid*
TMDD 50% EG
TMDD 50% PG
TMDD 50% BG
Imidazole
Catalysts and additives
Hydroxybutyl vinyl ether
Vinyl ethers and N-vinyl compounds
1,3-Dioxolane*
Higlyme*
Tetraglyme*
Ethyl Diglyme*
N-Ethylpyrrolidone
N-Methylpyrrolidone
Capromer™ PD4-05 (polycaprolactone)
Capromer™ PD1-20 (polycaprolactone)
delta-Valerolactone
PolyTHF
TMP
Hydroxypivalic neopentylgycol ester, HPN
Neol
HDO
1,5-Pentanediol
1,4-Butanediol
Polyalcohols and derivatives
Triethylamine, TEA
Diisopropanolamine
2-(2-Aminoethoxy)ethanol
N,N-Diethylethanolamine
N,N-Dimethylethanolamine S
N-Methylethanolamine
Diethanolamine
N,N-Bis-(3-aminopropyl)methylamine
N,N'-Bis-(3-aminopropyl)ethylenediamine, N4-Amine S
3-(Dimethylamino)propylamine
Neopentanediamine (2,2-Dimethyl-propane-1,3-diamine)
1,3-Diaminopropane
Diethylenetriamine
Ethylenediamine
Amines
Maleic anhydride
Formic acid 99%
Acids
Products

Applications

Coating systems

Base

Drying

Resin

Improved properties

Additives

Customer benefits

Distinguished properties

Applications

Wood

Furniture

Plastic

Others

Wetting agent/defoamer

Anti-corrosion

Automotive

General industry

Wood

Can and coil

Graphic arts

Others

Adhesion promoter with varnish

Water-based coatings

Building blocks/chemistry

Applications

Distinguished properties

Products
Powder coatings

We have supplied the coatings industry for many years with a wide range of high-quality intermediates for the production of modern coatings. Binders, crosslinking agents and reactive diluents as well as solvents and additives form part of our portfolio. Our integrated global production and logistics Verbund enables us to supply our customers around the globe flexibly and reliably.

In close cooperation with our customers, we also develop new intermediates that are specifically adapted to the needs of the coatings industry. We support the development of new businesses and contribute to the improvement of existing formulations. Intensive communication with our customers forms the basis of our work.

We continuously expand our expertise especially for the coatings industry, acquiring specific knowledge in this field. In the future we intend to support and promote innovations in the various business areas of the industry even more systematically and faster than ever to help our customers to keep growing profitably.

It is listening that makes the difference! By offering a wide range of innovative approaches and methods we strive for a target-oriented dialogs with our customers. In this way, too, we promote our goal of helping our customers to be more successful.

Focusing on coatings industry needs, we organize professional innovation workshops, develop new products in joint projects and offer technical support.
Powder coating is a major metal coating technology for household appliances, furniture, fences, pipes, and structural applications. Additionally, low temperature (< 100°C) UV-cured powder coatings have been developed for wood applications in recent years. Many binder technologies are available in today’s market. Crosslinkable powder coatings often use saturated polyester resins as binders.

Our product portfolio includes building blocks, catalytic additives, and crosslinkers for polyester resins.

We offer broad expertise in a wide range of high-quality intermediates for manufacturing modern coatings. With our global reliability and flexibility as well as our clear dedication to innovation we strive to meet the needs of customers in the coatings industry. Intensive communication with our customers forms the basis of our work.

### Products

<table>
<thead>
<tr>
<th><strong>Acids</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Naphthalenedicarboxylic Acid (HNDA)*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Polyol and derivatives</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Neopentylglycol, NPG</td>
</tr>
<tr>
<td>Hydroxypivalic neopentylglycol ester, HPN</td>
</tr>
<tr>
<td>Trimethylolpropane, TMP (hydro)</td>
</tr>
<tr>
<td>Capromer™ PT1-05 (polycaprolactone)</td>
</tr>
<tr>
<td>2-Methylimidazole, pure</td>
</tr>
</tbody>
</table>

Note: New products in the BASF Intermediates portfolio.
We have supplied the coatings industry for many years with a wide range of high-quality intermediates for the production of modern coatings. Binders, crosslinking agents and reactive diluents as well as solvents and additives form part of our portfolio. Our integrated global production and logistics network enables us to supply our customers around the world flexibly and reliably. We foster and support the growth of our customers at all stages of the coatings value chain.

In close cooperation with our customers, we also develop new intermediates that are specifically adapted to the needs of the coatings industry. We support the development of new businesses and contribute to the improvement of existing formulations. Intensive communication with our customers forms the basis of our work.

We continuously expand our expertise especially for the coatings industry, acquiring specific know-how in the field. In the future we intend to support and promote innovations in the various business areas of the industry even more systematically and faster than ever to help our customers to keep growing profitably.

It is listening that makes the difference! By offering a wide range of innovative approaches and methods we strive for a target-oriented dialog with our customers. In this way, too, we promote our goal of helping our customers to be more successful.

Focusing on coatings industry needs, we organize professional innovation workshops, develop new products in joint projects and offer technical support.

The data contained in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, the data does not relieve processors from carrying out their own investigations and tests; neither does the data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

The safety data given in this publication is for information purposes only and does not constitute a legally binding Material Safety Data Sheet (MSDS). The relevant MSDS can be obtained upon request from your supplier or you may contact BASF directly at info.intermediates@basf.com.
We offer broad expertise in a wide range of high-quality intermediates for manufacturing modern coatings. With our global reliability and flexibility as well as our clear dedication to innovation we strive to meet the needs of customers in the coatings industry. Intensive communication with our customers forms the basis of our work.

Low-viscosity epoxy binders (lower molecular weight) are formulated into solvent-free, two-component epoxy coatings for application on metal, pipes, and floors.

Our poly-functional polyetheramines react with commercially available diisocyanate-terminated monomers or polymers for use in high-solid, three-component coatings for construction, roof and tank coating applications.

Unsaturated polyester resins are used in high-gloss wood coatings and composite applications.

As an alternative to styrene used in unsaturated polyester resins, our vinyl ethers can be used as reactive diluents for proper viscosity adjustment. We offer a diverse portfolio of building blocks, reactive diluents (vinyl ethers), crosslinkers, special solvents, and additives for solvent-free liquid unsaturated polyester coating applications.

### Products

- **Building blocks/chemistry**
- **Curing technologies**
- **Applications**
- **Distinguished properties**

### Coating technologies

- Physical drying
- Oxidative drying
- Urethanes
- Amino resins
- Epoxies
- Radiation curing
- Polyesters (including alkyls and UP resins)
- Polyurethanes
- Acrylics and vinyl polymers

### Building blocks/chemistry

- Maleic anhydride
- Maleimide
- Acyloin
- Nitrile
- Isocyanate
- Peroxide
- Comonomer
- Catalyst and accelerator
- Acid
- Maleic anhydride
- Amines
- Ethylenediamine
- Diethylenetriamine
- 1,3-Diaminopropane
- Neopentanediamine
- N,N'-Bis-(3-aminopropyl)methylenediamine
- N,N-Diethanol-p-toluidine
- N,N-Diisopropanol-p-toluidine
- Lupragen® API
- Lupragen® N 100
- Lupragen® N 101
- Lupragen® N 201, 202, 203
- Lupragen® DMI
- Lupragen® NMI

### Applications

- Graphic arts
- Automotive
- General industry
- Wood
- Can and coil
- Architectural
- Others

### Distinguished properties

- Unstained polyester resins
- Polyurea coatings