

## BUILD PERFORMANCE AND COST EFFICIENCY INTO YOUR FORMULATION

Selector Guide for Coatings and Construction Formulators



# MARKET-LEADING BRANDS FOR AN INDUSTRY-LEADING PROCESS

The original brands serving worldwide coatings and construction industries for more than half a century

Ara Cool Gabepro HyPox HyPox Hypro Versamid Erisys

# **Industrial Hygiene and Industrial Risks Expertise**

Huntsman Advanced Materials supports on average 25 customers every year with a broad array of Industrial Hygiene and Industrial Risks services, including:

- PPE recommendations
- REACH clarifications including risk management
- Risk assessment and evaluation for practical manufacturing strategies
- Equipment advice
- Thermal risk management assessment



It is vital that your product development process integrates superior production efficiency with exceptional performance to deliver a stronger competitive advantage.

With Huntsman Advanced Materials, you can be sure your end-product will meet demanding and highly regulated specifications – and stay within budgets. We can also help you to drive quality and results across your entire production process in key areas such as rheology and reactivity, with proven methods and technologies to reduce costs and maintain a sustainable business platform.

#### STREAMLINE YOUR PROCESS

Shortening time-to-market is essential to reduce costs and to ensure your development process is as commercially viable as possible. To this end, we provide full-circle

Our quality control results in 99% customer satisfaction

All our sites have at least two industry certifications

services for building blocks processing, as well as support for all your risk management needs. We can also help you to understand and clarify your packaging requirements to facilitate processing and scale-up, when necessary.

#### **BEST-IN-CLASS SECURITY OF SUPPLY**

It is also crucial for you to have absolute confidence in your production line stability. This is where our global production footprint and raw materials supply chain deliver outstanding results.

Over the years, we have developed a world-class manufacturing and supply network that delivers complete security against disruptions to your production process. As part of this, we also operate uncompromising quality control measures that always ensure consistent product quality, with specialist packaging services adapted to your specific processing requirements. You will also benefit from:

- Dangerous goods logistics expertise
- 'Preferential Origin' status on most products, avoiding excessive custom taxes
- Duplication of manufacturing capabilities in different sites

#### Zero compromise on quality

Thanks to our Integrated Quality system from customer to supplier, less than 1% of delivery line items experience a complaint in any form, regarding both products and services.



# LET'S MAKE THE FUTURE A BETTER PLACE TO BE



At Huntsman Advanced Materials, the future matters to us. It is simply not viable to create high performance products if the planet pays the price. That is why we integrate sustainable practices into all our products and manufacturing processes, and why our solutions can be found in thousands of leading products across virtually every industry.

#### **BUILDING A SUSTAINABLE FUTURE**

We recognize the important role we play in creating a sustainable industry. We enrich lives through innovation and deliver solutions that create value for our customers and make a brighter world possible for future generations. Our products enable a low-carbon economy and make a positive contribution to society and the environment.

#### SUPPORT FROM START TO SUCCESS

Customers depend upon us to improve the durability and performance of their products. However, we provide even greater value through our proven ability to reduce the time needed to bring ideas to market and increase overall success rate.

With a unique range of solutions and dedicated technical service teams, you can rely on us to support your needs from initial concept development to final processing, and beyond.



#### **SUSTAINABLE CHEMISTRY**

- We have used bio-sourced raw materials for more than a decade
- Huntsman proactively screens and seeks alternatives to substances of concern (SoC)
- We work jointly with our customers to lower their impact on the environment by supplying products with up to 70% less carbon footprint
- We are a leader in SVHC-free hardener technology
- We make continued use of SoC risk evaluation tools to assess technical solutions and new materials
- We provide superior toxicological and regulatory expertise

# COMPONENT SOLUTIONS TO ENABLE HIGH-PERFORMANCE AND COST-EFFICIENT DIFFERENTIATED FORMULATIONS







Performance	Productivity	Sustainability
Outstanding protection to endure extreme conditions of:  • Humidity  • Temperature  • Chemical exposure and pressure resistance to NaOH, H <sub>2</sub> SO <sub>4</sub> , Xylene and Ethanol	<ul> <li>Fast return-to-service</li> <li>Reduction of costs and downtime</li> <li>Ease of use</li> <li>Ability to use in compromised surfaces</li> </ul>	<ul> <li>Low/Zero VOC formulations</li> <li>Reduction of waste and energy consumption</li> <li>Proven high content of bio sourced raw materials</li> <li>Commitment to reduce micro-plastic into the environment</li> </ul>







Durability	Versatility	Strength
<ul><li>Extension of service life of assets</li><li>Reduction of maintenance costs</li></ul>	<ul><li>Multi-purpose components</li><li>Variety of application conditions (low temperature cure)</li></ul>	<ul><li>Mechanical strength and toughness</li><li>Excellent adhesion</li></ul>

## PRODUCT NOMENCLATURE GUIDE

Nomenclature	Huntsman Advanced Materials' registered trademark for commercial hardeners are ARA® COOL; ARADUR®; GABEPRO™; HYPRO®; and VERSAMID®. And for commercial resins ARALDITE®; ARA® XTREME; EPALLOY®; ERISYS® and HYPOX®.  The number following the product letter code is the characteristic for the product name. A one-up-to-three-letter code behind the characteristic product number indicates a solvent (mixture). This solvent code is followed by a number indicating the solid content of the product (in the example bellow it's 70% hardener dissolved in a xylene/butanol mixture).  Example: ARADUR® 3467 XW 70  In case of minor product changes, we indicate the actual version by a figure separated from the product number by a dash.  Example: ARADUR® hardener, a one-letter code (S) behind the characteristic product number indicates that the hardener is the fast version of the original product.	In case of ARALDITE® resin, the two-letter code following the registered trademark has the following meaning:  First letter indicates the intended use of the product.  Example: ARALDITE® PY 302-2 CH  B Special resin for civil engineering applications D Modification product (reactive diluent, flexibilizer, matting agent, etc.)  G Standard resin P Special resin  EPN Epoxy phenol novolac  ECN Epoxy cresol novolac  Second letter indicates the supply form.  Example: ARALDITE® PY 302-2 CH  T Solid product Y Liquid product Y Liquid product Z Resin in solution, emulsion or dispersion form
Acronyms legend	ATBN Amine-Terminated poly(Butadiene-co-acryloNitrile) BPA Bisphenol A BPF Bisphenol F DDA DicyanDiAmide FCA Flow control agent (in %)	GA Glycidyl Amine GE Glycidyl Ether  Example: ERISYS® GE 60 ERISYS® GA 240 HYPRO® 1300x45 ATBN
REACH	All products mentioned hereby are:  Nonyl phenol-free Phenol-free Tert-butyl phenol-free Bisphenol-A-free¹ Bisphenol-F-free¹ Salicylic Acid-free  Those products marked «X» in the column «BzOH Free» do not contain benzyl alcohol.	All the components of the products contained in this brochure have been pre-registered and will be registered under REACH (or might be REACH exempt).  1 Certain products may contain trace amounts where adducted with BPA or BPF epoxy resins. BPA/BPF resins may contain low traces of BPA/BPF
Gel times	The values under «Gel time» have been measured using TECAM, 250g/23°C with ARALDITE® GY 250 unless otherwise specified (n.m. = not measured).	
Safety and handling precautions	The Material Safety Data Sheet (MSDS) should be consulted prior to handling any of here listed products.	
Product range	Additional products are available upon request.	

# **TABLE OF CONTENTS**

# **SELECTION OF**

# **BUILDING BLOCKS**

#### **APPLICATIONS**

Construction flooring	8
Mortar, repair, and injection	8
Coatings for metal substrates	9
Coatings with excellent chemical resistance	9
Intumescent Coatings	10
Powder Coatings	10-11

#### **COMPONENT SOLUTIONS**

Crack Resistance	11
Waterborne systems	12
VOC*-free systems	13

\*VOC: Volatile Organic Compound

### **PRODUCT** LIST

#### **EPOXY CURING AGENTS AND ACCELERATORS**

Polyamines & Polymercaptans	14
Waterborne curing agents	15
Accelerators and other curatives	15
Polyamidoamines	16
Curatives in solutions	16

#### **EPOXY RESINS**

Liquid resins	17
Solid resins	17
Solutions	17
Waterborne resins	18
Crosslinkers	18

#### **SPECIALTY EPOXY RESINS AND DILUENTS**

Bisphenol A with reactive diluent	18
Bisphenol A/F with reactive diluent	18
Bisphenol F and A/F pure	19
Epoxy phenol novolac	19
Reactive diluents & Specialty epoxy resins	19

#### **APPLICATIONS**

#### **CASE: SELF-LEVELLING**

SVHC-free ARADUR® 2965-1 hardener in combination with low viscosity crystallization-resistant ARALDITE® GY 783 epoxy resin enables you to prepare a self-levelling floor with limited surface defects, even in humid conditions and at temperatures down to 15°C.



In combination with

#### **Construction flooring**

ARADUR® 3290	Primers	ARALDITE® GY 783 Standard low viscosity, low crystalizing resin
ARADUR® 450 ARADUR® 450-1 S	Primers for wet concrete and metals	
ARADUR® 3296-1	Fast curing system	
ARADUR® 3484	Solvent-free coating	MODIFIER DW 1765 Improves surface aspect, waterspot
ARADUR® 2965-1 ARADUR® 43-1	Self-leveling systems	resistance and intercoat adhesion
ARADUR® 3253-1	Decorative system (low yellowing)	
ARADUR® 20317	Decorative system (low yellowing)	ARALDITE® DY-31 CMR-Free fast reactive diluent ARALDITE® DY-C Hydrophobic reactive diluent EPALLOY® 5000 Non aromatic multifunctional epoxy resin



#### **CASE: GROUT / CRACK INJECTION**

CMR-free ARALDITE® DY-31 multifunctional reactive diluent delivers high functionality and low viscosity, allowing you to improve the diffusion into any substrate and keep the good thermo-mechanical properties of an epoxy system. It also provides higher reactivity, especially in combination with ARADUR® 2992.

In a supplied and a supplied

#### Mortar, repair, injection

		In combination with
ARADUR® 2963-1 ARADUR® 46-2 S	Flooring mortars	ARALDITE® GY 253 Standard low viscosity resin for flooring with better mechanical properties
ARADUR® 20250 ARADUR® 2992	Repair mortars Concrete injection systems Adhesives for concrete	ARALDITE® BY 158 Very low viscosity but high mechanical properties ARALDITE® PY 302-2 Good all rounder, absolutely non-crystalizing ARALDITE® DY-31 CMR-Free fast reactive diluent
GABEPRO™ GMP 895	Ultra reactive system for fast settling	

#### **CASE: METAL COATINGS**

Protecting structural steel from corrosion is essential to extend the lifetime of your assets and improve safety. Our speciality components portfolio includes solutions for coatings formulations with superior flexibility (ARALDITE® PY 4122-1) and adhesion to compromised substrates (ARALDITE® GZ 290 X/M 90), while meeting low



temperature cure needs (ARA® COOL curatives range) and stringent VOC regulations (ARADUR® 3282-1 hardener).

In combination with

#### Coatings for metal substrates

ARADUR® 450 ARADUR® 450-1 S	Surface tolerant PAA-adducts	ARALDITE® GZ 290 X (M) 90  Modified solid resin  ARALDITE® GZ 7071 X 75
ARADUR® 3282-1	Surface tolerant PAA-adducts. No benzyl alcohol	Solid resin in solution
ARA® COOL 1047 W 80 ARA® COOL 1034 XW 90	Mannich Bases. High reactivity & Low temperature cure	ARALDITE® GZ 7071 X 75 / GY 783 Blend of solid resin in solvent with liquid resin ARALDITE® PY 4122-1 Flexible epoxy resin  ERISYS® GE 35H Flexible reactive diluent  PHENOXY PKHS-40 Increases hydrophobicity and adhesion
ARADUR® 3296-1 ARADUR® 837-1 ARA® COOL 3077-1	Highly reactive CA to increase reactivity	
ARADUR® 3275 ARADUR® 75-1	Flexibilizing CA	
ACCELERATOR 2950	Co-crosslinking accelerator	
HYPRO® 1300X45 ATBN	Hydrophobic Flexibiliser, Adhesion promoter	

#### **CASE: PIPELINE COATINGS**

Oil and gas companies are drilling deeper, which requires coatings that can endure increasingly demanding conditions. ARA® XTREME 2100 epoxy resin enables the formulation of a coating that can withstand H<sub>2</sub>S, at temperatures around 200°C, and pressures of 7000 kPa. PETROBRAS N-2912-certified ARADUR® 3064 curing agent offers excellent resistance against NaOH, H<sub>2</sub>SO<sub>4</sub>, Xylene, and Ethanol. These solutions enable the replacement of expensive alloys in drilling pipes without compromising performance and extending service life.



#### Coatings with excellent chemical resistance

ARADUR® 3064	Best chemical resistance with low viscosity	ARALDITE® GY 250* Bis A-Liquid resin* ARALDITE® GY 289 ARALDITE® EPN 1183 Low viscosity, novolac resin based
ARADUR® 20315*	Good chemical resistance (better with post cure at 80°C)	
ARADUR® 2973	High chemical resistance	ARALDITE® EPN 1180  ARALDITE® EPN 1180 X 80
ARADUR® 33641*	Highly reactive CA to increase reactivity	Novolac resins of functionality = 3.6  ARA® XTREME PY 2100  Low viscosity trifunctional epoxy for high temperature resistance  HYPOX® RF 928  Improves crack propagation resistance  HYPOX® RM 22  Low viscosity toughener  PHENOXY PKHS-40  Increases hydrophobicity and adhesic
ARADUR® 3776 XW 55 ARADUR® 30 XWM 55	Good chemical resistance. Thin film Other solvent alternatives available	
ARADUR® 3275 ARADUR® 75-1	Flexibilizing CA	
ACCELERATOR 2950	Co-crosslinking accelerator	

<sup>\*</sup> Food compliance according to EU-legislation

#### ALDITE® GY 250\*

In combination with

#### **CASE: INTUMESCENT COATINGS**

In an event of fire, unprotected steel can reach critical temperatures in only a few minutes that can lead to instability and collapse. Protective intumescent coatings provide an insulating barrier between fires and the structural members, giving vital extra time for people to escape. Our low-VOC products offer exceptional temperature resistance and corrosion protection,

superior flexibility and are highly resistant to severe cellulosic and hydrocarbon hazards.

ARADUR® 3745 and ARADUR® 450-1 S surface-tolerant curing components provide excellent adhesion to compromised substrates to enable an improved balance of cost and performance by eliminating the use of primers.

#### Components for intumescent coatings

In	com	ıbır	เลtเด	n with

ARADUR® 3745 ARADUR® 450-1 S	Surface tolerant PAA-adducts	ARALDITE® PY 302-1 Liquid epoxy resin ARALDITE® PY 4122-1
ARADUR® 3282-1	No benzyl alcohol	Flexible aromatic epoxy resin  ARALDITE® DY-C
ARA® COOL 3077-1	Highly reactive CA to increase reactivity	Hydrophobic reactive diluent  ERISYS® GE 35H
ARADUR® 75-1	Flexibilizing CA	Flexible reactive diluent
ACCELERATOR 2950	Co-crosslinking accelerator	

#### POWDER COATING BUILDING BLOCKS FOR FORMULATORS

#### Solid epoxy systems

ARALDITE® GT 7203 ARALDITE® GT 6143 ARALDITE® GT 2874-1	Resin with flow agent and low melt viscosity, for powder coatings with excellent flow
ARALDITE® ECN 9699	Suitable as modifier in combination with standard resins to enhance reactivity, improving chemical and temperature resistance

#### Solid curing agents

ARADUR® 2844 ARADUR® 835	Amine-type
ARADUR® 3123	Imidazole-type

#### **Matting agents**

DT 125-2 DT 3360 N	Wax-free non yellowing matting additives
DT 3329-1	Wax-containing matting additive

#### **Crosslinkers for polyester powder**

ARALDITE® PT 910	Epoxy functional crosslinker with good UV resistance
ARALDITE® PT 912	Higher functionality compared to PT 910

#### **Accelerator**

ACCELERATOR DT 3126-4	Suitable for polyester - PT 910 and PT 912 systems
-----------------------	--

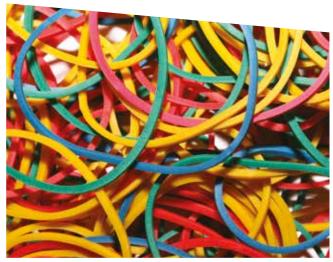
#### **COMPONENT SOLUTIONS**

#### Components for crack resistance

Product	Features	Viscosity at 27°C	Acrylonitrile content	Polymer functionality	Reactive end group
Unit / scale		(mPa.s)	(%)		
HYPRO® 1300X42 ATBN	Improves adhesion to difficult to bond to substrates. Residual free amine methylpentamethylenediamine ~ 10%	100 000	18	1,8	Amine
HYPRO® 1300X45 ATBN	Very low content of N-AEP (<0.1%)	375 000	18	1,8	Amine

Product	Features	Viscosity at 25°C	CTBN Content	Epoxy Equivalent Weight	Epoxy resin type
Unit / scale		(mPa.s)	(%)	(g/Eq)	
HYPOX® RA 840	High CTBN content, thermal shock and peel resistance	190 000	40	340	BPA
HYPOX® RA 1340	High CTBN content, thermal shock and peel resistance	450 000	40	350	BPA
HYPOX® RF 928	Multi-functional	55 000	20	210	EPN
HYPOX® RM 22	Low viscosity and High CTBN content	20 000	50	340	Cyclohexanedimethanol diglycidyl Ether
HYPOX® RK 820	Solid (Soft. Point: 90°C)	450 000 (100°C)	20	950	Solid BPA resin
HYPOX® RK 84 L	Solid (Soft. Point: <100°C)	400 000 (100°C)	30	1375	Solid BPA resin





#### **CASE: POWDER COATINGS**

ARALDITE® PT 910 and 912 TGIC-free epoxy crosslinkers allow zero emission of volatiles upon cure and are guaranteed to meet high standards for weatherable polyester powder coatings. ARADUR® 3123 naphthol-functionalized imidazol is the perfect replacement for obsolete phenolic-based (BPA) hardeners. With a favorable toxicological profile, it provides high reactivity, while keeping a very good storage stability.

#### **CASE: CRACK PROPAGATION RESISTANCE**

Huntsman offers a broad range of HYPRO® and HYPOX® reactive liquid elastomers that differ in butadiene and acrylonitrile content, as well as the nature of the reactive end-group. This allows formulators to balance properties and develop specific toughening solutions.

#### **CASE: WATERBORNE SYSTEMS**

Our innovative epoxy waterborne systems offer coatings performance comparable to solvent-borne systems while meeting stringent Volatile Organic Compounds (VOC) regulations. For example, ARADUR® 3986 curing agent combined with ARALDITE® PZ 3961-1 epoxy resin provides outstanding anti-corrosion resistance.

Our new ARA® COOL WB 007 waterborne accelerator enables full adaptation of the curing speed of waterborne formulations, reducing drying times up to 30% at low temperatures and eliminating the need for a plasticizer. Its capability to generate a visible end of pot-life and to maintain the flexibility, adhesion, and anti-corrosion performance of the coating makes it an unique crosslinking component for waterborne hardeners. In addition, ARA® COOL WB 007 co-reacting accelerator in combination with ARALDITE® PY 22783 emulsifiable waterborne epoxy resin allows you to create a fast-setting waterborne drainable mortar or an Epoxy Cement Concrete (ECC).



#### Waterborne primers for anti-corrosion

#### In combination with

ARADUR® 3986	Fast drying hardener with good flexibility	ARALDITE® PZ 3961-1 Solid resin dispersion, type 1, with excellent adhesion to critical substrates
ARA® COOL WB 007	Co-reacting waterborne accelerator	ARALDITE® PY 33757 Solvent-free primer, water-dilutable liquid resin, 100% solid content ARALDITE® PZ 756-1/67 Solvent-free, liquid resin emulsion ARALDITE® GY 776 Modified liquid resin without surfactant, solvent-free, offering good chemical resistance PHENOXY PKHW-34/35 Improving hydrophobicity and adhesion

#### Waterborne systems for mineral / non-metal substrates

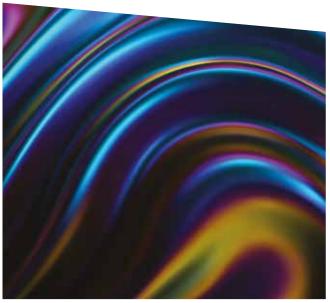
#### In combination with

ARADUR® 3985	Thick layer system	ARALDITE® GY 257 Modified liquid resin without surfactant
ARADUR® 39	Fast drying coating / sealer	ARALDITE® PY 33757 Solvent-free primer, water-dilutable liquid resin, 100% solid content ARALDITE® PZ 756-1/67 Solvent-free, liquid resin emulsion ARALDITE® GY 776 Modified liquid resin without surfactant ARALDITE® PY 22783 Emulsifiable, crystallization-resistant epoxy resin
ARA® COOL WB 007	Co-reacting waterborne accelerator	

#### **CASE: ACCELERATOR 2950**

ACCELERATOR 2950 is a reactive accelerator offering a good balance between faster drying time and reduction of gel time. Its unique amine functionality gives the ability to co-react with the epoxy resin, making it part of the polymer backbone. The leaching is five times less than other non-reactive plasticizing accelerators, minimizing the impact on chemical or corrosion-resistance properties and enabling the use of a larger quantity of accelerator.





#### **CASE: ARALDITE® DY-31**

ARALDITE® DY-31 multifunctional reactive diluent reduces viscosity of a standard epoxy resin while maintaining Tg of the formulations, as well as mechanical and chemical resistance properties. In combination with ARADUR® 20317 epoxy curing agent, it also allows you to prepare a non-aromatic, plasticizer-free coating that delivers outstanding UV resistance and low yellowing behavior.

#### **VOC-free systems**

#### In combination with

ARADUR® 3282-1 ARADUR® 837-1	Primer for wet concrete and metals	ARALDITE® GY 783 Standard low viscosity, low crystalizing resin
ARADUR® 3275	Flexible membrane	
ARADUR® 20250 ARADUR® 2992	Injection systems	
ARADUR® 20315 ARADUR® 33641	High chemical resistance systems	
ACCELERATOR 2950	Co-crosslinking accelerator	
ARADUR® 20317	Decorative system (low yellowing)	ARALDITE® DY-31 CMR-free fast reactive diluent ARALDITE® DY-C Hydrophobic reactive diluent EPALLOY® 5000 Non-aromatic multifunctional epoxy resin

## **EPOXY CURING AGENTS AND ACCELERATORS**

#### **Polyamines & Poymercaptans**

Product designation	Characteristics	Viscosity 25°C	Amine value	H+ active equiv.	Gel time*	Color	BzOH- free
Unit / scale		mPa.s	mg KOH/g	g/Eq	min	Gardner	
ARADUR® 21	Aliphatic polyamine	< 10	680 - 720	40	51	≤ 1	х
ARADUR® 22	Aliphatic polyamine	< 8	810 - 830	34	71	≤ 2	х
ARADUR® 42	Cycloaliphatic polyamine	10 - 20	645 - 665	42	95	≤ 1	х
ARADUR® 43-1	Cycloaliphatic polyamine	200 - 400	260 - 280	115	44	≤ 1	
ARADUR® 46-1	Polyamine adduct	130 - 230	310 - 340	95	38	≤ 3	
ARADUR® 46-2 S	Cycloaliphatic polyamine	150 - 250	295 - 325	95	25	≤ 4	
ARADUR® 53-1 S	Polyamine adduct	580 - 640	275 - 305	~ 115	17	≤ 1	
ARADUR® 70	Polyetherurethane amine	16 000 - 27 000	65 - 75	~ 900	300 - 500	≤ 5	Х
ARADUR® 75-1	Polyetherurethane amine	3 000 - 9 000	120 - 140	~ 250	40	≤ 7	х
ARADUR® 835	Solid isolated aliphatic polyamine adduct	600 - 1 200 <sup>(1)</sup>	180 - 210	~ 200	1 000 (2)	≤ 6.5	х
ARADUR® 837-1	Polyamine adduct	4 600 - 6 500	300 - 500	66 - 75	19	≤ 3	x
ARADUR® 2963-1	Cycloaliphatic polyamine	30 - 70	325 - 350	85	40	≤ 2	
ARADUR® 2965-1	Cycloaliphatic polyamine	80 - 250	330 - 360	~ 94	25	≤ 4	
ARADUR® 2973	Aliphatic polyamine	900 - 1 400	300 - 335	~ 85	40	≤ 7	
ARADUR® 2992	Aliphatic polyamine	10 - 20	575 - 605	~ 55	5	≤ 2	x
ARADUR® 3243-1	Cycloaliphatic polyamine	220 - 360	280 - 360	95	60	≤1	
ARADUR® 3253-1	Cycloaliphatic polyamine	200 - 260	290 - 320	~ 95	40	≤ 1	
ARADUR® 3275	Formulated polyetherpolyamine	200 - 300	100 - 170	250	85	≤ 6	Х
ARADUR® 3290	Polyamine adduct	100 - 180	820 - 900	48	22	≤ 4	
ARADUR® 3296-1	Polyamine	350 - 650	330 - 370	75	~ 17	≤ 8	
ARADUR® 3484	Polyamine adduct	300 - 550	350 - 450	95	30	≤ 6	
ARADUR® 3741	Cycloaliphatic polyamine	1 - 15	695 - 730	39	84	≤1	×
ARADUR® 20250	Accelerated polyamine	130 - 210	1 010 - 1 170	30 - 65	18	≤ 6	х
ARADUR® 20315	Formulated polyamine adduct	5 500 - 8 000	470 - 510	59	~ 100	-	х
ARADUR® 20317	Formulated polyamine adduct	2 500 - 6 000	410 - 510	~ 65	65	≤ 0.5	х
ARA® COOL 3077-1	Formulated amine zero-VOC	200 - 400	380 - 420	75	19	< 6	х
ARADUR® 33641	Formulated fast cure amine	4 000 - 8 000	450 - 550	58	~ 10	≤ 8	х
ARADUR® 3064	Multifunctional polyamine adduct	1 200 - 1 850	685 - 715	43	66	≤ 8	x
GABEPRO™ GPM 800	Polymercaptan	10 000 - 15 000	-	~ 285	~	≤ 1	х
GABEPRO™ GPM 895	Polymercaptan accelerated	8 000 - 15 000	-	180 - 200	< 1 (20 g)	≤ 9	x

<sup>(1): 30%</sup> in xylene/butanol (1:1)
(2): With solid epoxy resin and solvent
\*: Gel time has been measured with ARALDITE® GY 250

#### Waterborne curing agents

				ı			
Product designation	Characteristics	Viscosity 25°C	Amine value	H+ active equiv.	Gel time*	Color	BzOH- free
Unit / scale		mPa.s	mg KOH/g	g/Eq	min	Gardner	
ARADUR® 35-1	Polyamine adduct in water	19 000 - 35 000	100 - 120	~ 380	~ 70	≤ 6	x
ARADUR® 36	Polyamine adduct 79-81% in water	4 000 - 7 000	185 - 225	~ 165	~ 150	≤ 6	x
ARADUR® 38-1	Polyamine adduct 79-81% in water	12 000 - 20 000	170 - 210	~ 150	~ 75	≤ 6	×
ARADUR® 39	Polyamine adduct 49-51% in water	11 000 - 19 000	120 - 140	~ 335	120 - 240	≤ 5	×
ARADUR® 340	Polyamidoamine adduct 49-51% in water	18 000 - 23 000	155 - 175	~ 210	120 - 180	≤ 12	x
ARADUR® 435	Polyamidoamine adduct 49-51% in water	13 000 - 23 000	160 - 200	~ 250	90 - 120	≤ 10	x
ARADUR® 3985	Polyamine adduct 54-56% in water	1 000 - 6 000	170 - 210	~ 265	60	≤ 6	x
ARADUR® 3986	Polyamine adduct 39-41% in water	15 000 - 35 000	90 - 110	~ 415	180	≤ 6	x
ARA® COOL WB 007	Waterborne accelerator	1 500 - 2 000	100 - 300	400 - 500	5	≤ 10	x

<sup>\*:</sup> Gel time has been measured with ARALDITE® GY 776

#### **Accelerators and other curatives**

Product	Characteristics	Viscosity 25°C	Softening point	BzOH- free
Unit / scale		mPa.s	°C	
			ı	
ACCELERATOR 960-1	Tertiary amine for ambient cure epoxy systems	120 - 250	n/a	х
VERSAMID® EH-50	Non aromatic Tertiary amine for ambient cure epoxy systems (low color)	150 - 400	n/a	x
ACCELERATOR 2950	Co-reacting tertiaryamine based accelerator (H+ active equiv. = 75 g/Eq), for ambient cure epoxy systems, low plasticising effect	2 000 - 6 000	n/a	×
ACCELERATOR 3130	40 % in ethanol, non amine accelerator for epoxy system, extremely high reactivity at ambient temperature, ideal as drop-in accelerator to cope with cold weather	10 - 100	n/a	Х
ARADUR® 3123	Low toxicity imidazole based accelerator, oustanding latency vs. standard imidazole	n/a	180 - 250	X
ACCELERATOR DT 3126-4	Accelerator for powder coatings which allows the adjustment of the reactivity of epoxy/polyester and polyester/ARALDITE® PT910 powder systems	n/a	30 - 60	X
ARADUR® 2844	Hardener (H+ active equiv. = 37 g/Eq) for epoxy powder coatings exhibiting relatively high reactivity compare to DICY	n/a	139 - 143	х

#### **Polyamidoamines**

Product designation	Characteristics	Viscosity 25°C	Amine value	H+ active equiv.	Gel time*	Color	BzOH-free
Unit / scale		mPa.s	mg KOH/g	g/Eq	min	Gardner	
						l	
ARADUR® 115	Polyamidoamine	3 100 - 3 700 at 75°C	240 - 260	240	> 1 000 (2)	≤ 10	Х
ARADUR® 125	Polyamidoamine	700 - 900 at 75°C	340 - 370	130	120	≤ 10	x
ARADUR® 140	Polyaminoimidazoline	300 - 600 at 75°C	370 - 410	95	120	≤ 10	x
ARADUR® 145	Polyaminoimidazoline	2 400 - 4 000	380 - 420	95	180	≤ 10	х
ARADUR® 350	Polyaminoimidazoline	100 - 400	370 - 410	95	180	≤ 10	х
ARADUR® 370	Polyaminoimidazoline	150 - 350	480 - 520	95	70	≤ 10	х
ARADUR® 450	Polyamidoamine adduct	700 - 2 000	250 - 290	115	78	≤ 10	
ARADUR® 450-1 S	Polyamidoamine adduct	450 - 1 300	280 - 320	115	50	≤ 10	
ARADUR® 3282-1	Formulated polyamidoamine adduct	900 - 1 900	290 - 350	115	100	≤ 10	X
ARADUR® 20745	Formulated polyamidoamine adduct accelerated	800 - 1600	410 - 470	75 - 130	45	≤ 10	x
ARADUR® 848	Polyamidoamine	2 500 - 5 500	200 - 230	135 - 190	95	≤ 10	
ARADUR® 891	Formulated polyamidoamine	130 - 190	520 - 550	74 - 82	~100	≤ 10	x
ARADUR® 33225	Polyamidoimidazoline	100 - 400	240 - 310	75 - 115	900	≤ 12	x

 $<sup>^{\</sup>star}\,$  : Gel time has been measured with ARALDITE® GY 250 (2): With solid epoxy resin and solvent

#### **Curatives in solutions**

Product designation	Characteristics	Viscosity 25°C	Amine value	H+ active equiv.	Gel time*	Color	BzOH-free
Unit / scale		mPa.s	mg KOH/g	g/Eq	min	Gardner	
ARADUR® 100 X 60	Polyamidoamine in xylene	2 100 - 3 500	49 - 57	~ 790	> 1 000 (2)	≤ 10	Х
ARADUR® 100 XM 60	Polyamidoamine in xylene/ methoxypropanol (4:1)	2 200 - 3 900	50 - 56	~ 790	> 1 000 (2)	≤ 10	x
ARADUR® 115 X 70	Polyamidoamine in xylene	750 - 1250	168 - 182	~ 340	> 1 000 (2)	≤ 10	×
ARADUR® 422 XW 70	Polyamidoamine adduct in xylene/n-butanol (3:2)	6 000 - 12 000	140 - 170	~ 340	> 1 000 (2)	≤ 10	x
ARADUR® 423 XW 60	Polyamidoamine adduct in xylene/n-butanol (4:1)	800 - 1 400	122 - 138	~ 520	> 1 000 (2)	≤ 10	х
ARADUR® 424 XW 50	Polyamidoamine adduct in xylene/n-butanol (4:1)	600 - 2 400	80 - 110	~ 785	> 1 000 (2)	≤ 10	x
ARADUR® 460 J 90	Polyamidoamine adduct in ethanol	1 800 - 5 500	240 - 270	~ 190	100	≤ 10	x
ARADUR® 30 XWM 55 (3)	Isolated amine adduct in xylene/ n-butanol/methoxypropanol (4:1:4)	2 000 - 2 800	98 - 114	~ 370	> 1 000 (2)	≤ 5	x
ARADUR® 3776 XW 55 (3)	Isolated amine adduct in xylene/n-butanol	1 500 - 2 500	100 - 120	~ 350	> 1 000 (2)	≤ 8	х
ARADUR® 3467 XW 70	Phenalkamine adduct	1 000 - 3 000	170 - 210	180 - 220	120 (2)	≤ 18	x
ARA® COOL 1047 W 80	Mannich-Base type hardener without residual volatile amine (80 % solids) in solution Butanol	1 800 - 2 700	255 - 285	130 - 185	20	< 7	x
ARA® COOL 1034 XW 90	Modified Mannich-Base type hardener (90% solid) in solution Xylene/Butanol	1 000 – 2 500	425 - 450	105 - 155	90	< 10	x

<sup>\* :</sup> Gel time has been measured with ARALDITE® GY 250 (2): With solid epoxy resin and solvent (3): Other solvent alternatives available

## **EPOXY RESINS**

#### Liquid resins

Product designation	Characteristics	Viscosity 25°C	Epoxy index	Epoxy equiv.	Color
Unit / scale		mPa.s	Eq/kg	g/Eq	Gardner
ARALDITE® GY 240	BPA	7 000 - 9 000	5.45 - 5.56	180 - 183	≤ 2
ARALDITE® GY 250	BPA	10 000 - 12 000	5.30 - 5.45	183 - 189	≤ 2
ARALDITE® GY 260	BPA	12 000 - 16 000	5.20 - 5.49	182 - 192	≤ 3
ARALDITE® GY 261	BPA, high chlorine content	12 500 - 17 500	4.90 - 5.20	192 - 204	≤ 3
ARALDITE® GY 266	BPA	9 500 - 12 000	5.10 - 5.30	189 - 196	≤ 2
ARALDITE® GY 280	BPA, semi-solid	450 - 700 <sup>(2)</sup>	3.57 - 4.45	225 - 280	≤ 3 2
ARALDITE® GY 2600	BPA	12 000 - 14 000	5.29 - 5.43	184 - 189	≤ 1

#### **Solid resins**

Product designation	Characteristics	Viscosity (1) 25°C	Epoxy index	Epoxy equiv.	Mettler soft point	Color (1)
Unit / scale		mPa.s	Eq/kg	g/Eq	°C	Gardner
ARALDITE® GT 6071	BPA type 1	160 - 190	2.15 - 2.22	450 - 465	70 - 75	≤ 1
ARALDITE® GT 7071	BPA type 1	200 - 250	1.90 - 2.00	500 - 525	77 - 82	≤ 1
ARALDITE® GT 7072	BPA type 2	280 - 340	1.68 - 1.75	570 - 595	82 - 90	≤ 1
ARALDITE® GT 2874-1	BPA based resin FCA 10%	350 - 550	1.15 - 1.35	740 - 870	85 - 95	≤ 2
ARALDITE® GT 7203	BPA based resin FCA 2.5%	300 - 400	1.55 - 1.65	605 - 645	82 - 90	≤ 1
ARALDITE® ECN 1280	Epoxy cresol novolac, functionality ~ 5	3 000 - 4 000 <sup>(3)</sup>	4.45 - 4.85	205 - 225	75 - 85	≤ 6
ARALDITE® ECN 9699	Epoxy cresol novolac, functionality ~ 5.5	7 000 - 10 000 <sup>(3)</sup>	4.45 - 4.85	205 - 225	80 - 100	≤ 6

#### **Solutions**

Product designation	Characteristics	Viscosity (1) 25°C	Epoxy index	Epoxy equiv.	Solids	Color
Unit / scale		mPa.s	Eq/kg	g/Eq	%	Gardner
ARALDITE® GZ 280 X 80	Semi-solid BPA in xylene	650 - 900	3.10 - 3.40	290 - 323	79 - 81	≤ 3
ARALDITE® GZ 20500 X 90	Modified semi-solid BPA in xylene	3 000 - 8 000	3.60 - 4.30	232 - 278	89 - 91	≤3
ARALDITE® GZ 290 X 90	Modified semi-solid BPA in xylene	1 300 - 3 700	3.30 - 3.70	270 - 305	89 - 91	≤ 6
ARALDITE® GZ 290 M 90	Modified semi-solid BPA in methoxypropanol	1 300 - 3 700	3.30 - 3.70	270 - 305	89 - 91	≤ 6
ARALDITE® GZ 601 X 75	Solid BPA in xylene	5 500 - 7 500	1.60 - 1.80	555 - 625	74 - 76	≤ 2
ARALDITE® GZ 7071 X 75	Solid BPA in xylene	8 000 - 13 000	1.50 - 1.67	600 - 670	74 - 76	≤ 2
ARALDITE® GZ 488 V 32	High MWt. BPA in solution (4)	1 500 - 2 500	≤ 0.05	≥ 20 000	31 - 33	≤ 3
PHENOXY PKHS-40	Phenoxy dissolved in MEK	4 500 - 7 000	~	~	39 - 41	≤ 3

<sup>(1): 40%</sup> in butylcarbitol
(2): 70% in butylcarbitol
(3): 150°C
(4): 32% in 1-methoxy-2-propylacetate/cyclohexanone (93:7)

#### **Waterborne resins**

Product designation	Characteristics	Viscosity 25°C	Epoxy index	Epoxy equiv.	Solids	Color
Unit / scale		mPa.s	Eq/kg	g/Eq	%	Gardner
ARALDITE® PY 33757	Emulsifiable, crystallization-resistant epoxy resin	5 000 - 8 000	5.50 - 5.80	172 - 182	100	≤ 3
ARALDITE® PY 22783	Emulsifiable, crystallization-resistant epoxy resin	800 - 1 400	4.90 - 5.30	188 - 204	100	≤ 2
ARALDITE® PZ 756-1/67	Emulsified, crystallization-resistant epoxy resin	80 - 400	3.38 - 3.70	270 - 295	66 - 68	white
ARALDITE® PZ 33757/67	Emulsified, crystallization-resistant epoxy resin	50 - 400	3.65 - 3.90	256 - 274	65 - 69	white
ARALDITE® PZ 3961-1	Aqueous dispersion of BPA type 1 resin	500 - 1 500 at 23°C	1.96 - 2.22(1)	450 - 510 <sup>(1)</sup>	51 - 55	white
PHENOXY PKHW-34	Anionically-stabilized colloidal dispersion of phenoxy resin PKHB	800 - 1600	~	~	33 - 35	white
PHENOXY PKHW-35	Anionically-stabilized colloidal dispersion of phenoxy resin PKHH	1 000 - 4 000	~	~	30 - 32	white

<sup>(1):</sup> Measured on the solid products

#### **Crosslinkers**

Product designation	Characteristics	Melting point	Epoxy index	Epoxy equiv.	Solids	Color
Unit / scale		°C	Eq/kg	g/Eq	%	Gardner
ARALDITE® PT 910	Hardener for polyester or acrylic resin powder coatings	90 - 102	6.50 - 7.10	141 - 154	100	white
ARALDITE® PT 912	Hardener for polyester or acrylic resin powder coatings	82 - 96	6.50 - 7.10	141 - 154	100	white

# SPECIALTY EPOXY RESINS AND DILUENTS

#### **Bisphenol A with reactive diluent**

Product designation	Characteristics	Viscosity 25°C	Epoxy index	Epoxy equiv.	Color
Unit / scale		mPa.s	Eq/kg	g/Eq	Gardner
ARALDITE® BY 158	BPA with difunctional reactive diluent	280 - 360	6.20 - 6.50	154 - 161	≤ 3
ARALDITE® GY 253	BPA with difunctional reactive diluent	800 - 1 400	5.40 - 5.80	172 - 185	≤ 1
ARALDITE® GY 257	BPA with monofunctional reactive diluent	500 - 650	5.20 - 5.50	182 - 192	≤ 2
ARALDITE® GY 298	BPA with reactive flexibilizer	2 000 - 4 000	2.20 - 2.50	400 - 455	≤ 2
ARALDITE® GY 764	BPA with difunctional reactive diluent	350 - 550	5.50 - 5.80	179 - 189	≤ 2
ARALDITE® GY 776	BPA with monofunctional reactive diluent	2 700 - 3 800	5.10 - 5.40	185 - 196	≤ 2

#### Bisphenol A/F with reactive diluent

Product designation	Characteristics	Viscosity 25°C	Epoxy index	Epoxy equiv.	Color
Unit / scale		mPa.s	Eq/kg	g/Eq	Gardner
ARALDITE® GY 783	BPA/F with monofunctional reactive diluent	800 - 1 100	5.10 - 5.40	185 - 196	≤ 2
ARALDITE® GY 793	BPA/F with monofunctional reactive diluent	650 - 750	5.00 - 5.40	185 - 200	≤ 2
ARALDITE® PY 3483	BPA/F with monofunctional reactive diluent	1 000 - 1 600	4.80 - 5.10	196 - 208	≤ 4

#### Bisphenol F and A/F pure

Product designation	Characteristics	Viscosity 25°C	Epoxy index	Epoxy equiv.	Color
Unit / scale		mPa.s	Eq/kg	g/Eq	Gardner
ARALDITE® GY 281	BPF	5 000 - 7 000	5.80 - 6.30	158 - 172	≤ 4
ARALDITE® GY 282	BPF	3 300 - 4 100	5.80 - 6.10	164 - 172	≤ 2
ARALDITE® GY 285	BPF	2 000 - 3 000	5.80 - 6.10	164 - 172	≤ 5
ARALDITE® PY 302-2	BPA/F, non-crystallizing	6 500 - 8 000	5.65 - 5.90	169 - 177	≤ 3
ARALDITE® PY 304	BPA/F	6 500 - 8 000	5.50 - 5.80	172 - 182	≤ 3
ARALDITE® PY 306	BPF, low viscosity	1 200 - 1 600	6.00 - 6.40	156 - 167	≤ 1
ARALDITE® PY 720	BPA/F	7 000 - 9 400	5.30 - 5.60	179 - 189	≤ 2

#### **Epoxy phenol novolac**

Product designation	Characteristics	Viscosity 25°C	Epoxy index	Epoxy equiv.	Color	
Unit / scale		mPa.s	Eq/kg	g/Eq	Gardner	
ARALDITE® EPN 1179	Semi-solid EPN, functionality 2.8	1 100 - 1 700 (1)	5.60 - 5.80	172 - 179	≤ 3	
ARALDITE® EPN 1180	Semi-solid EPN, functionality 3.6	20 000 - 50 000 (1)	5.50 - 5.70	175 - 182	≤ 2	
ARALDITE® EPN 1183	Medium viscosity, modified EPN, functionality 3.3	7 000 - 13 000	6.30 - 6.90	145 - 159	≤ 3	
ARALDITE® EPN 1180 X 80	EPN in xylene	1 200 - 2 000	4.40 - 4.60	217 - 227	≤ 2	
ARALDITE® GY 289	Low viscosity EPN, functionality 2.2	9 000 - 11 000	5.70 - 6.00	167 - 175	≤ 5	
ARALDITE® PY 307-1	Medium viscosity, EPN, functionality 2.2	30 000 - 50 000	5.60 - 5.90	170 - 179	≤ 4	

<sup>(1):</sup> Measured at 52°C

#### Reactive diluents & Specialty epoxy resins

Product designation	Characteristics	Viscosity 25°C	Epoxy index	Epoxy equiv.	Color
Unit / scale		mPa.s	Eq/kg	g/Eq	Gardner
		I	I	I	
ARALDITE® DY-C	Diglycidylether of cyclohexane dimethanol	50 - 100	6.00 - 6.50	154 - 167	≤ 2
ARALDITE® DY-D	Diglycidylether of butanediol	15 - 25	8.00 - 8.50	118 - 125	≤ 2
ARALDITE® DY-E	Monoglycidylether of C12-C14 alcohol	4 - 12	3.15 - 3.60	278 - 317	≤ 2
ARALDITE® DY-F	Diglycidylether of polyoxypropylene	60 - 90	1.95 - 2.35	425 - 513	≤ 3
ARALDITE® DY-H	Diglycidylether of hexanediol	21 - 31	6.25 - 7.00	143 - 155	≤ 2
ARALDITE® DY-K	Monoglycidylether of cresol	6 - 12	5.30 - 5.70	175 - 189	≤ 2
ARALDITE® DY-L	Glycerol propoxylated triglycidylether	160 - 240	1.25 - 1.65	606 - 800	≤ 5
ARALDITE® DY-P	Monoglycidylether of p-tert. butylphenol	20 - 28	4.10 - 4.50	222 - 244	≤ 3
ARALDITE® DY-31	Multiglycidylether of aliphatic polymer (average functionality ~4)	200 - 400	7.80 - 8.50	117 - 128	≤ 3
ARALDITE® DY 3601	Diglycidylether of polyoxypropylene	42 - 52	2.47 - 2.60	385 - 405	≤ 3
ARALDITE® CY 184	Hexahydrophthalic acid diglycidylester	700 - 900	5.80 - 6.10	164 - 172	≤ 3
ERISYS® GE 35H	Triglycidylether of Castor oil	300 - 500	1.53 - 1.82	550 - 650	≤ 8
ERISYS® GE 60	Epoxidized sorbitol	8 000 - 18 000	5.13 - 6.25	160 - 195	≤ 7
ERISYS® GA 240	Tetraglycidyl ether of meta-Xylenediamine	1 600 - 3 000	9.09 - 10.53	95 - 110	≤ 5
ARA® XTREME PY 2100	Triglycidyl ether of para-Aminophenol	550 - 850	9.43 - 10.53	95 - 106	≤ 9
ARALDITE® PY 4122-1	Flexible Bisphenol-A based Epoxy Resin	7 500 - 22 500	2.08 - 2.22	450 - 480	≤ 5
EPALLOY® 5000	Hydrogenated Bisphenol-A Epoxy Resin	1 300 - 2 500	4.35 - 4.75	210 - 230	≤ 1

#### MADE POSSIBLE



#### **Huntsman Advanced Materials**

At Huntsman Advanced Materials, we make things possible. Serving many of the world's leading businesses across virtually every industry, we enable greater innovation, performance and sustainability to address global engineering challenges and contribute towards a better quality of life.

Our capabilities in high-performance adhesives and composites, delivered by more than 1600 associates, support over 2000 global customers with innovative, tailor-made solutions and more than 1500 pioneering epoxy, acrylic, phenolic and polyurethane-based polymer products.

#### We operate synthesis, formulating and production facilities around the world



Distributed by

#### For more information

www.huntsman.com/advanced\_materials advanced\_materials@huntsman.com

#### Europe, Middle East & Africa

Huntsman Advanced Materials (Switzerland) GmbH Klybeckstrasse 200 P.O. Box 4002 Basel Switzerland

Tel: +41 61 299 1111 Fax: +41 61 299 1112

Asia Pacific & India Huntsman Advanced Materials (Guangdong) Co., Ltd, Shanghai Branch Office 455 Wenjing Road, Minhang District Shanghai 200245, P.R. China Tel: +86 21 3357 6588

Huntsman Advanced Materials Americas Inc. 10003 Woodloch Forest Drive The Woodlands USA

Tel: +1 888 564 9318 Fax: +1 281 719 4047

#### Legal information

Il trademarks mentioned are either property of or licensed to Huntsman Corporation or an affiliate thereof in one or more, but not all, countries,

Sales of the product described herein ("Product") are subject to the general terms and conditions of sale of either Huntsman Advanced Materials LLC, or its appropriate affiliate including without limitation Huntsman Advanced Materials (Europe) BVBA, Huntsman Advanced Materials Americas Inc., or Huntsman Advanced Materials (Hong Kong) Ltd. or Huntsman Advanced Materials (Guangdong) Ltd. ("Huntsman" The following supercedes Buyer's documents. While the information and recommendations included in this publication are, to the best of Huntsman's knowledge, accurate as of the date of publication. NOTHING CONTAINED HEREIN IS TO BE CONSTRUED AS A REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT OF ANY INTELLEC-TUAL PROPERTY RIGHTS, OR WARRANTIES AS TO QUALITY OR CORRESPONDENCE WITH PRIOR DESCRIPTION OR SAMPLE, AND THE BUYER ASSUMES ALL RISK AND LIABILITY WHATSOEVER RESULTING FROM THE USE OF SUCH PRODUCT, WHETHER USED SINGLY OR IN COMBINATION WITH OTHER SUBSTANCES. No statements or recommendations made herein are to be construed as a representation about the suitability of any Product for the particular application of Buyer or user or as an inducement to infringe any patent or other intellectual property right. Data and results are based on controlled conditions and/ or lab work. Buyer is responsible to determine the applicability of such information and recommendations and the suitability of any Product for its own particular purpose, and to ensure that its intended use of the Product does not infringe any intellectual property rights.

The Product may be or become hazardous. Buyer should (i) obtain Material Safety Data Sheets and Technical Data Sheets from Huntsman containing detailed information on Product hazards and toxicity, together with proper shipping, handling and storage procedures for the Product, (ii) take all steps necessary to adequately inform, warn and familiarize its employees, agents, direct and in direct customers and contractors who may handle or be exposed to the Product of all hazards pertaining to and proper procedures for safe handling, use, storage, transportation and disposal of and exposure to the Product and (iii) comply with and ensure that its employees, agents, direct and indirect customers and contractors who may handle or be exposed to the Product comply with all safety information contained in the applicable Material Safety Data Sheets, Technical Data Sheets or other instructions provided by Huntsman and all applicable laws, regulations and standards relating to the handling, use, storage, distribution and disposal of and exposure to the Product. Please note that products may differ from country to country. If you have any queries, kindly contact your local Huntsman representative

© 2022 Huntsman Corporation. All rights reserved. Ref. No. Coatings brochure 12.22\_EN\_EU



