SOLVAY

asking more from chemistry®

Additives for Paints and Coatings

Solvay Novecare Coating Additives

SOLVAY Novecare, Global Expert in Additives for Coatings Applications

Solvay, a world leader in the development and production of specialty chemicals, supplies performance additives for a variety of paint and coating applications.

Solvay additives deliver outstanding benefits to coating formulations, such as enhanced surface wetting, improved coating adhesion to substrate, superior dispersion stability and gloss, enhanced color development and stability, and better foam control. Solvay additives are also effective in minimizing production mixing time and improving manufacturing efficiency.

Technical support dedicated

With our global technical support network, Solvay provides customers with custom-made solutions and develops formulations adapted to their needs and requirements for the paint and coatings industry. Solvay uses its expertise in safety, toxicology, environmental and regulatory affairs to provide guidance on industrial formulation compounds, thus creating additional value for paint and coatings customers.

Global industrial footprint

Through its world-class manufacturing operations in Europe, North America, Asia Pacific and Latin America, Solvay shares best practices within zones and benefits from technology transfer. Strengthened by a worldwide R & D and tech-support network, Solvay develops strong partnerships with customers around the world and creates innovative materials focused on next-generation technologies for the paint and coatings market.

Note: These products are produced at worldwide locations through the Novecare division of Solvay.

Solvay Novecare offers multiple products

- **RHODOLINE®** series defoamers
- **RHODOLINE®** dispersing agents
- **RHODOLINE®, IGEPAL®** and **GEROPON®** wetting agents
- **RHODOLINE®** series freeze/thaw and open time additives
- **FENTAMINE®** and **FENTACARE®** specialty amines
- **RHODIASOLV®** coalescent

Adapted for paint and coating applications:

- Waterborne paints
- Aqueous ink systems
- Water-based adhesives

Solvay's Sustainable Portfolio

Solvay offers a versatile toolbox for waterborne paint and coatings formulation.

Solvay Novecare works alongside its customers to design products and solutions with reduced impact on health and the environment. As part of corporate social responsibility, Solvay uses procedures that monitor its products throughout their entire life cycles. Solvay supports customers with a broad range of sustainable solutions and services including products optimized around criteria such as biodegradability, eco-toxicity, VOC content, and percentage of renewable materials.

Solvay **VOC-free defoamers and APE-free surfactants** are examples of its commitment to sustainability and the environment.

Solvay recognizes the difficulties in selecting the optimal surfactant system for wetting, dispersing or designing an emulsion polymer system. Formulators require surfactants that perform and are compatible with the entire formula and do not compromise the quality of the coating. Environmental concerns are also key drivers behind the reformulation of well-established systems, leaving formulators with additional challenges to overcome, such as the conversion to APE-free systems or ensuring compatibility with low to VOC-free formulations.

Solvay Novecare is developing and expanding its line of industry-leading paint additives to enhance the performance of **VOC-free and APE-free water-based formulations** while providing additional benefits such as improved freeze-thaw, open time, film appearance, defoaming and wetting characteristics. Solvay consistently develops new **sustainable additives** that allow formulators to address the performance challenges of newer waterborne formulations, while answering the demand for more sustainable and cost-effective products.

Functional Additives

RHODOLINE® OTE-500: OPEN-TIME ADDITIVE

RHODOLINE® OTE-500 is a novel APE and solvent free open time additive for low to VOC-free waterborne paints, coatings, inks and adhesives.

RHODOLINE® OTE-500 improves open time for low to VOC-free waterborne paints. It could be utilized in various formulations from low to high gloss paints.

RHODOLINE® OTE-500 significantly improves open time for paints made with the following resin systems:

- All-Acrylic copolymer
- Styrene-Acrylic copolymer (S/A)
- Vinyl Acetate / Acrylic copolymer (V/AC)
- Vinyl Acetate / Ethylene Copolymer (EVA)
- Water-based Alkyd Paints

RHODOLINE® OTE-500 works in all gloss: high gloss, semi-gloss, satin and flat (matte) systems

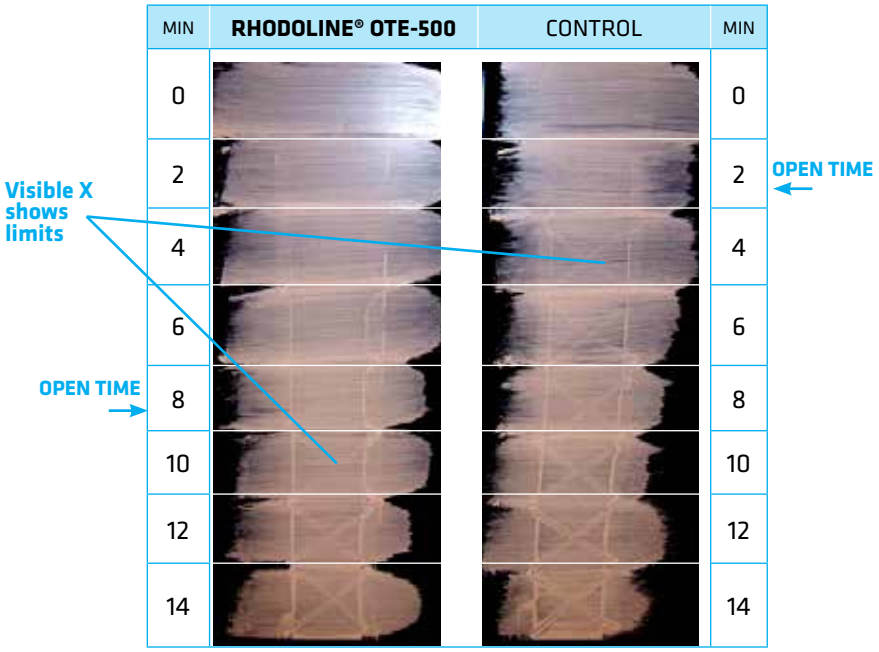
Key Features

- Extends open time
- Exhibits excellent dispersion stability
- Allows formulation of Eco-label compliant coatings
- May reduce/eliminate wetting agents

Sustainable Additives

- APE-free and VOC-free additive
- Low odor solution
- Enables design of low to VOC-free coating formulations
- Design sustainable coatings with RHODOLINE® OTE-500 [Green Seal (GS-11) or EU Ecolabel compliant paints]

PAINT SAMPLE	CONTROL	**RHODOLINE® OTE-500**
VOC-free ACRYLIC SG PAINT	2	8



		Application Guideline								International Inventory Status					
PRODUCT NAME	**DESCRIPTION**	APE-Free	VOC-Free	Flat to semi-gloss paints	High Gloss	Elastomerics / Roof coatings	Traffic Marking Paints	Inks	Adhesives	USA (TSCA)	CANADA (DSL)	EUROPE (EINECS)	AUSTRALIA (AICS)	SOUTH KOREA (KECL)	JAPAN (MITI)
RHODOLINE® OTE-500	APE-free and VOC-free additive that promotes extended open time	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

◆ Listed



Low VOC Acrylic Semi-Gloss Paint

LOW VOC SEMI-GLOSS PAINT FORMULA	A	B	C
	CONTROL PAINT	RHODOLINE® OTE-500 + RHODOLINE® 5520	RHODOLINE® OTE-500
Raw Materials	**Wt. %**	**Wt. %**	**Wt. %**
Water	7.75	7.75	7.75
RHODOLINE® 286N – dispersant	0.78	0.78	0.78
RHODOLINE® 643 - defoamer	0.05	0.05	0.05
RHODOLINE® 5520 – wetting agent	0.39	0.39	0.00
RHODOLINE® OTE-500	0.00	0.00	0.39
Amine	0.19	0.19	0.19
Attagel 50	0.48	0.48	0.48
Titanium Dioxide	22.29	22.29	22.29
Water	8.67	8.67	8.67
Acrylic Latex (50%)	46.52	46.52	46.52
RHODOLINE® OTE-500	0.00	1.21	0.82
RHODOLINE® 643	0.19	0.19	0.19
High Shear Builder (ICI)	2.23	1.65	1.94
Water	9.21	8.61	8.56
Low Shear Builder (Ku)	0.85	0.82	0.97
Mildewcide	0.39	0.39	0.39
Total	**100**	**100**	**100**

PVC = 22.2%; Weight Solids = 45.4%; Volume Solids = 32.4%

For optimum results use **RHODOLINE® OTE-500** as shown in formulation C above by splitting the quantity in the grind to replace the wetting agent and in the letdown. **RHODOLINE® OTE-500** increases the open time with minimal impact on dry film properties.

PAINT PROPERTIES TESTED	CONTROL PAINT	RHODOLINE® OTE-500 + RHODOLINE® 5520	RHODOLINE® OTE-500
Non-Ionic Surfactant R5520 - %	0.39	0.39	**0.00**
RHODOLINE OTE-500 - %	0.00	1.21	**1.21 (0.39 + 0.82)**
Gloss O/N 20°/60°/85	21/56/91	27/61/89	**23/57/89**
Freeze/Thaw - 5 Cycles - ΔKu	Fail-1	16	**14**
Open Time – Minutes ASTM D7488	2	8	**8**
Scrub Resistance ASTM D2486	>1000	555	**>1000**
Block Resistance ASTM D4946	Control	-	**-**
Color Rub-up ΔE – BLK (1.6% by volume)	0.53	0.79	**0.65**
Heat Aged – 2 wks @ 50°C – Δ KU	-1	4	**0**
Stain Resistance ASTM D4828	Control	=	**=**
Surfactant Leaching - O/N Dry	8	9	**9**
Low Temp FF, 5°C – Sealed/Unsealed	10/10	8/10	**10/10**

Rating System: 10 = Best; 0 = Worst

Functional Additives

RHODOLINE® FT-100: FREEZE-THAW STABILITY ADDITIVE

Freeze-Thaw Process

Freezing of Latex Polymers (to -18°C)

RHODOLINE® FT 100 is a unique APE-free and solvent-free additive utilized to improve freeze-thaw stability primarily for low Tg latex binders as well as waterborne paints formulated with these binders. RHODOLINE® FT 100 also improves gloss, pigment dispersions and stain resistance in these formulations.

Key Features

- Delivers freeze-thaw stability
- Enhances gloss
- Boosts stain resistance
- APE-free and VOC-free

Easy to use for a wide range of polymers

- All Acrylic
- Vinyl / Acrylic
- Styrene / Acrylic
- Ethylene vinyl acetate

		Application Guideline								International Inventory Status					
PRODUCT NAME	**DESCRIPTION**	APE-Free	VOC-Free	Flat to semi-gloss paints	High Gloss	Elastomerics / Roof coatings	Traffic Marking Paints	Inks	Adhesives	USA (TSCA)	CANADA (DSL)	EUROPE (EINECS)	AUSTRALIA (AICS)	SOUTH KOREA (KECL)	JAPAN (MITI)
RHODOLINE® FT-100	APE-free and VOC-free additive that promotes freeze-thaw stability	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

◆ Listed

Effects of RHODOLINE® FT-100 on Freeze-Thaw Stability of Low VOC Commercial PAINT

Commercial all acrylic gloss paint (VOC= 50 g/l/ASTM)	Initail Viscosity (KU)	1 Cycle	2 Cycle	3 Cycle	4 Cycle	5 Cycle	Usage levels in paint formulations
RHODOLINE® FT 100	102.4	103.8.	104.3	104.0	105.4	105.4	1.0%
No additive	121.1	gel	paint coagulated				–
Ethylene Glycol	103	gel	paint coagulated				1.0%
Alkyl Phenol Ethoxylate	88	gel	paint coagulated				1.0%
Linear Alkyl Ethoxylate	96	gel	paint coagulated				1.0%

Wetting Agents

SURFACTANTS

RHODOLINE® WA Series

- Very fast Wetting
- Extremely low foam
- Full compatibility with water based paints
- APE-Free
- VOC-free, flexible for point choice
- Low viscosity easy to handle

Solvay offers a comprehensive line of wetting and dispersing agents specifically designed for waterborne coatings systems and drives its innovation to deliver new and better performing APE-free and VOC-free solutions. **RHODOLINE®** and **IGEPAL®** dispersing and wetting agents provide excellent broad compatibility, improvement of color stability and color acceptance, improved flow and leveling and storage stability in both architectural and industrial paints, inks and adhesive systems. These workhorse additives will reduce the surface tension and improve pigment wetting with minimum foaming. **RHODOLINE® 200** and **300** series polymeric dispersants provide exceptional pigment dispersion, improved color acceptance and storage stability.

RHODOLINE® 3000 series provides exceptional pigment wetting and color improvement for carbon black and organic pigments. **RHODOLINE® 4000** series is designed for inorganic pigments.

RHODOLINE® WA APE-free wetting agents provide excellent substrate wetting and low foaming for waterborne paints, coatings, adhesives and inks. **RHODOLINE® WA** line of products are low viscosity with low pour point for ease of handling.

RHODOLINE® WA 120 at 1.0% addition	
Silicone	As is
RHODOLINE® WA 120	Benchmark

Wetting Agents

PRODUCT NAME	DESCRIPTION	Application Guideline								
		HLB Range	APE-Free	VOC	Flat to semi-gloss paints	High Gloss	Elastomerics / Roof coatings	Traffic Marking Paints	Inks	Adhesives
RHODASURF® BC-420	TDA Ethoxylate	8	Yes	Yes	◆	◆	◆	◆	◆	◆
RHODASURF® BC-729	TDA Ethoxylate	13.8	Yes	Yes	◆	◆	◆	◆	◆	◆
RHODOLINE® 5520	Low foam nonionic wetting agent; excellent wetting and color acceptance	N/A	Yes	Low	◆	◆	◆	◆	◆	
RHODOLINE® WA 100	Solvent free surfactant with a good balance of wetting and low foaming properties.		Yes	No	◆	◆	◆	◆	◆	◆
RHODOLINE® WA 120	Low foaming surfactant with excellent wetting properties. Great alternative to silicone wetting agents.	10 - 13	Yes	No	◆	◆	◆	◆	◆	◆
RHODOLINE® WA 200	High HLB surfactant with excellent wetting in low to high PVC paint formulations. Excellent alternate for APE, high HLB wetting agents. Improved paint stability.	17 - 19	Yes	No	◆	◆	◆	◆		
RHODOLINE® 4160	Ammonia neutralized anionic wetting agent used in low/zero VOC colorants; best for inorganic pigments. Improved color acceptance and color strength.	N/A	Yes	Low	◆	◆	◆	◆		
RHODOLINE® 4170	Potassium neutralized anionic wetting agent used in low/zero VOC colorants; best for inorganic pigments. Improved color acceptance and color strength.	N/A	Yes	Low	◆	◆	◆	◆	◆	
RHODOLINE® 4188	Ammonia neutralized anionic wetting agent used in low/zero VOC colorants; best for inorganic pigments. Improved color acceptance, color development, color strength and color float resistance.	N/A	Yes	Low	◆	◆	◆	◆	◆	
IGEPAL® CO series	Nonylphenol ethoxylates used as pigment wetters and color stabilizers	4 - 19	N0	No	◆	◆	◆	◆	◆	
IGEPAL® CA series	Octylphenol ethoxylates used as pigment wetters and color stabilizers	4 - 19	No	No	◆	◆	◆	◆	◆	
GEROPON® 99	Low Anionic surfactant for improved adhesion over chaulky and weathered surfaces	N/A	Yes	Low	◆	◆	◆	◆	◆	◆

◆ Listed | - Not listed

International Inventory Status							
USA (TSCA)	CANADA (DSL)	EUROPE (EINECS)	AUSTRALIA (AICS)	SOUTH KOREA (KECL)	CHINA (SEPA)	JAPAN (MITI)	PHILIPPINES (PICCS)
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FDA Compliance 21 CFR				
175.105	176.170	176.180	176.200	176.210
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NE	NE	NE	NE	NE
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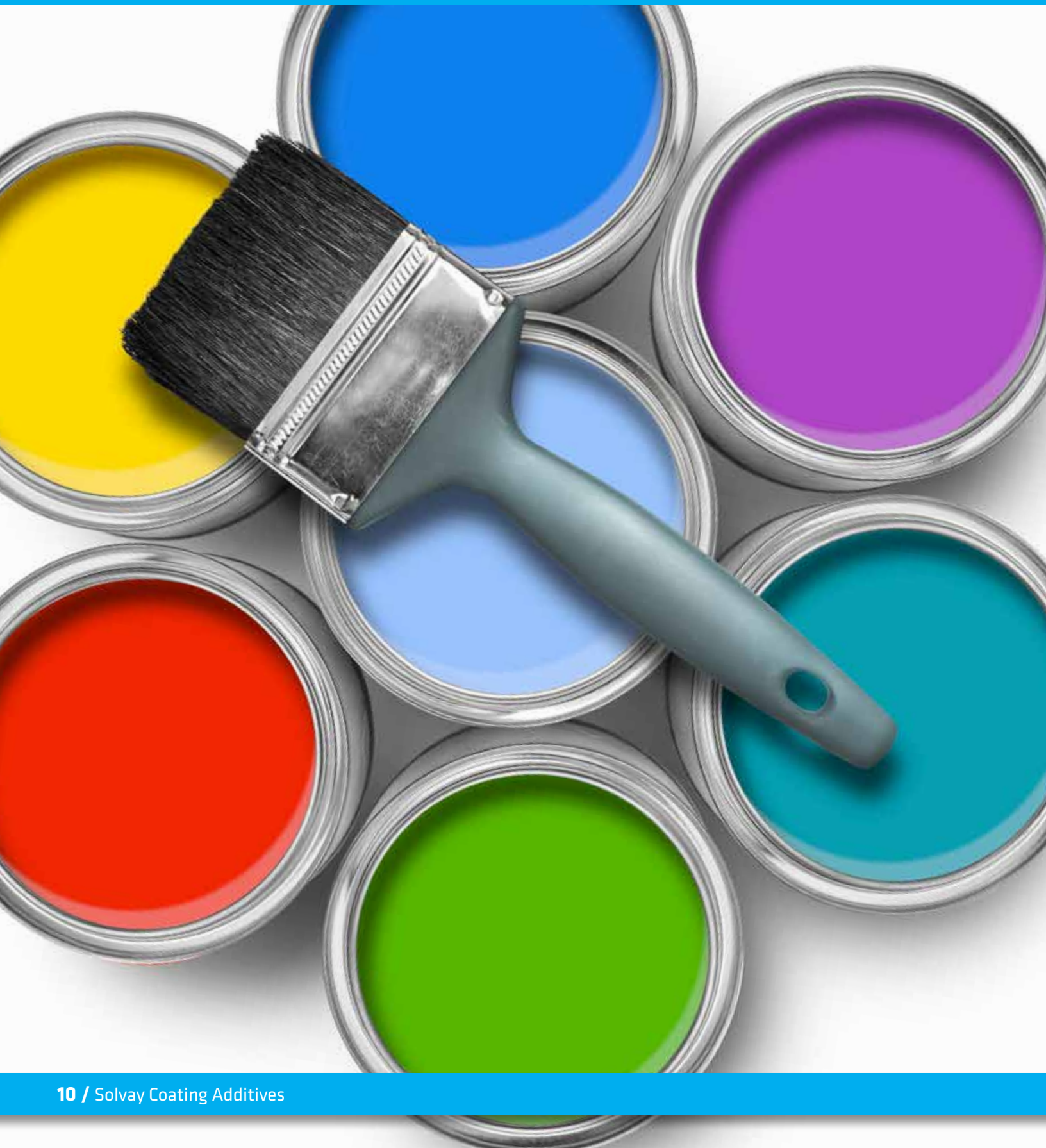
Dispersants for Waterborne Systems



Dispersing Process of Pigment

Three steps

Wetting

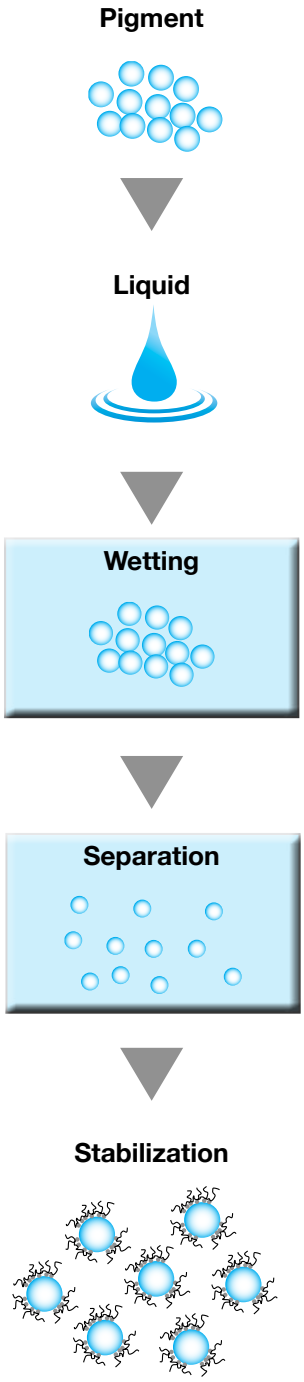
- Liquid replaces adsorbed gas on the surface of the pigment
- Immersion, adhesion, spreading, and capillary penetration

Separation

- Breaking up of the aggregates and agglomerates
- High amount energy needed

Stabilization

- Remaining particle size and its distribution during storage



Key Performance Features

- Excellent pigment wetting
- Improved flow
- Improved color acceptance
- Improved stability
- Low foaming
- Broad compatibility

Dispersants for Waterborne Systems

PRODUCT NAME	DESCRIPTION	HLB Range	APE-Free	VOC
RHODOLINE® 3100	Workhorse dispersant for low to medium HLB organic pigments including medium grade carbon black and lampblack pigments.	11 - 13	Yes	No
RHODOLINE® 3200	Dispersant for low HLB organic pigment including toluidine red, yellow and other organic pigments.	8 - 11	Yes	No
RHODOLINE® 3500	High HLB organic pigment wetting and dispersant agent. Works great with organic pigments as well as industrial grade carbon black pigments.	>16	Yes	No
RHODOLINE® 3700	High HLB pigment wetting and dispersant agent. It works great with high surface area pigments such as conductive carbon blacks.	>16	Yes	No
RHODOLINE® 4100	Anionic; 100 % active. Used in low/zero VOC colorants; best for inorganic and organic pigments that require mid HLB range wetting agents. Improved corrosion resistance.	N/A	Yes	Low
RHODOLINE® 4160	Ammonia neutralized anionic wetting agent used in low/zero VOC colorants; best for inorganic pigments. Improved color acceptance and color strength.	N/A	Yes	Low
RHODOLINE® 4170	Potassium neutralized anionic wetting agent used in low/zero VOC colorants; best for inorganic pigments. Improved color acceptance and color strength.	N/A	Yes	Low
RHODOLINE® 4188	Ammonia neutralized anionic wetting agent used in low/zero VOC colorants; best for inorganic pigments. Improved color acceptance, color development, color strength and color float resistance.	N/A	Yes	Low

◆ Listed | - Not listed | NE Not evaluated | * Availability based on REACH status

International Inventory Status							
USA (TSCA)	CANADA (DSL)	EUROPE (EINECS)	AUSTRALIA (AICS)	SOUTH KOREA (KECL)	CHINA (SEPA)	JAPAN (MITI)	PHILIPPINES (PICCS)
◆	◆	◆	◆	◆	◆	◆	
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FDA Compliance 21 CFR				
175.105	176.170	176.180	176.200	176.210
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NE	NE	NE	NE	NE
NE	NE	NE	NE	NE

Dispersants for Waterborne Systems

		Application Guideline											
PRODUCT NAME	**DESCRIPTION**	APE-Free	VOC-Free	Hydrophobic	Salt	pH	Percent active (%)	Recommende dosage Levels (wt %)	Flat to semi-gloss paints	High Gloss	Elastomerics / Roof coatings	Traffic Marking Paints	Inks
RHODOLINE® 111	Most versatile hydrophobic dispersant for stabilizing TiO2 and other inorganic pigments	◆	◆	◆	Na	10.0	25	0.1 - 0.3	◆	◆	◆	◆	◆
RHODOLINE® 207	Neutralized polyacrylated polymer with excellent chlorine and thermal stability	◆	◆		Na	7.0	45	1.0 - 5.0	◆			◆	◆
RHODOLINE® 226/35	Low-foaming, hydrophobic copolymer for reactive and non-reactive pigments	◆	◆	◆	Na	7.3	35	0.1 - 0.5	◆		◆	◆	◆
RHODOLINE® 230	Hydrophobic dispersant, particularly effective with high calcium carbonate pigment loadings	◆	◆		Na	7.9	44	0.1 - 0.5	◆		◆	◆	◆
RHODOLINE® 231	Water-soluble anionic dispersant used in pigment slurries and paper coatings. Suited for stabilizing inorganic pigments like TiO2, CaCO3 and MgOH slurries.	◆	◆		Na	7.3	44	0.1 - 0.5	◆			◆	◆
RHODOLINE® 270	Low-foaming, hydrophilic polyacrylate for general pigment dispersions	◆	◆		Na	7.3	43	0.1 - 0.4	◆			◆	◆
RHODOLINE® 286N	Low foaming, ammonia-neutralized copolymer, best for gloss development. Exterior paints	◆	◆	◆	NH4	7.0	50	0.1 - 0.4	◆	◆	◆	◆	◆

◆ Listed | - Not listed | NE Not evaluated | * Availability based on REACH status

FDA CLEARANCE					
175.105	175.300	175.320	176.170	176.180	176.210
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◆	◆	◆	◆	◆	◆
NE	NE	NE	NE	NE	NE

FDA Compliance 21 CFR					
USA (TSCA)	CANADA (DSL)	EUROPE * (EINECS)	AUSTRALIA (AICS)	SOUTH KOREA (KECL)	JAPAN (MITI)
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RHODOLINE® Defoamers

Solvay's extensive line of **RHODOLINE®** defoamers is designed to provide optimal foam control in coatings, inks and adhesive formulations. **RHODOLINE®** defoamers provide excellent deaeration and prevent foam formation during manufacture and application of paints, coatings, emulsion polymerization, inks and adhesives. **RHODOLINE®** defoamers minimize foam formation during high-shear applications such as paint roll, brush, spray and high-speed ink or coating applications.

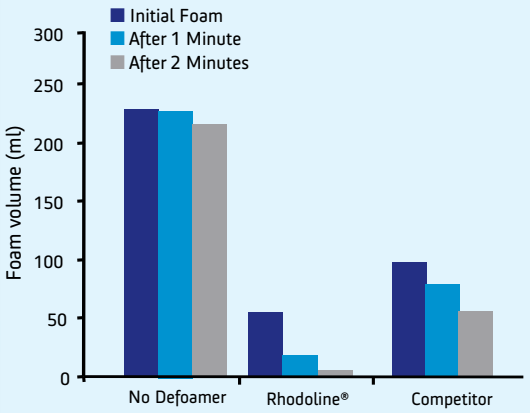
RHODOLINE® defoamer portfolio includes industry workhorse products for flat to high gloss paint systems as well as printing inks and adhesive systems. The newly developed eco-friendly, **APE–free and Zero-VOC defoamers**, provide quick foam knockdown and the lasting efficiency.

Wide range of use in polymers

- All acrylic
- Vinyl/Acrylic
- Styrene/Acrylic
- Vinyl Acetate Ethylene (VAE)

Key Features

- Quick bubble break and lasting efficiency in Flat to SG Paints
- Excellent efficiency in architectural and industrial paints, adhesives and inks
- Does not cause fish-eyes or film defects
- Excellent foam control in latex manufacturing of vinyl, acrylics and VAE resins
- Broad compatibility



RHODOLINE® Defoamers

PRODUCT NAME	DESCRIPTION	Application Guideline								
		APE-Free	VOC-Free	Silicone Free	Flat to semi-gloss paints	High Gloss	Elastomerics / Roof coatings	Traffic Marking Paints	Inks	Adhesives
Oil Based										
RHODOLINE® 622	Highly recommended for exterior flat to semi-gloss waterborne coatings	◆	◆		◆		◆			
RHODOLINE® 635	In-process defoaming of vinyl latexes for coatings, PSA and paints	◆	◆	◆	◆					◆
RHODOLINE® 640	Recommended for flat to semi-gloss coatings	◆	◆		◆					
RHODOLINE® 643	Recommended for contractor and consumer latex paints	◆	◆		◆		◆	◆	◆	
RHODOLINE® 646	In-process defoaming of latexes for coatings, PSA and inks	◆	◆		◆					◆
RHODOLINE® 670	In-process defoaming of latexes for coatings and PSA	◆	◆	◆					◆	◆
RHODOLINE® 679	Recommended for adhesives and inks	◆	◆	◆					◆	◆
RHODOLINE® 681F	Recommended for flat to semi-gloss coatings	◆	◆	◆	◆			◆	◆	◆
RHODOLINE® 688	Workhorse defoamer for flat to semi-gloss waterborne coatings	◆	◆		◆			◆		
Glycol Ester										
RHODOLINE® 990	A molecular defoamer that provides excellent defoaming efficiency with minimum impact on gloss.	◆	◆	◆		◆			◆	◆
RHODOLINE® 999*	A molecular defoamer that provides excellent defoaming efficiency in water-based inks and adhesives with minimum impact on gloss	◆		◆		◆			◆	◆

◆ Listed | - Not listed | NE Not evaluated | * REACH compliant

International Inventory Status						FDA Compliance 21 CFR				
USA (TSCA)	CANADA (DSL)	EUROPE (EINECS)	AUSTRALIA (AICS)	SOUTH KOREA (KECL)	JAPAN (MITI)	175.105	176.170	176.180	176.200	176.210
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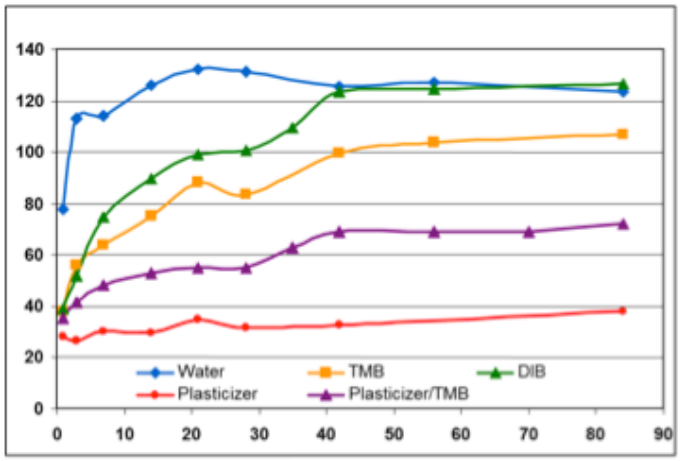
◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
◆	◆	◆	◆	◆	◆	L	L	L	L	L

Coalescent

DIB

RHODIASOLV® DIB is a new generation of low odor coalescent additive that meets tightening VOC regulations in the paint industry. **RHODIASOLV® DIB** helps in formulating low VOC paints without the drawbacks of plastisizers. **RHODIASOLV® DIB** coalescent agent is extremely efficient for architectural, industrial coatings and inks. **RHODIASOLV® DIB** does not cause film softness and provides films with improved hardness and scrub resistance.



Days of Film Drying

Key Features

- Enables low VOC formulations
- Low odor
- Enhanced efficiency
- Biodegradability
- Hydrolytically stable
- Nonflammable
- True coalescing agent

Specialty Amines

SOLVAY Novecare offers a broad portfolio of fatty and specialty amines for paints and coatings.

FENTAMINE® and **FENTACARE®** products are based on specialty amines for use in paints and ink systems. **FENTAMINE®** and **FENTACARE®** products offer multi-functional performance properties such as improvement of pigment wetting and dispersions, as polyurethane catalysts, epoxy curing agents and used as neutralizing agents.

Amine Types

- Fatty Alky primary amines
- Fatty Alkyl Tri & Tetra amines
- Alkyl Ethanol/Propanol amines
- Specialty amines
- Ethoxylated amines
- Quaternary amines

PRODUCT NAME	DESCRIPTION	CAS #	Recommended Use					International Inventory Status					
			Epoxy curing agent	PU catalys	Neutralizer	Dispersant/ grinding aid	Antistatic	USA (TSCA)	CANADA (DSL)	EUROPE ** (EINECS)	AUSTRALIA (AICS)	SOUTH KOREA (KECL)	JAPAN (MITI)
Primary Amines													
FENTAMINE® A-CO	Coco amine	61788-46-3				◆		◆	◆	◆	◆	◆	NE
FENTAMINE® A-12	Laurylamine	124-22-1				◆		◆	◆	◆	◆	◆	◆
FENTAMINE® A-O	Oleyamine	112-90-3				◆		◆	◆	◆	◆	◆	◆
FENTAMINE® A-HT	Hydrogenated tallow amine	61788-45-2				◆			◆	◆	◆	◆	◆
FENTAMINE® A-T	Tallow amines	61790-33-8				◆			◆	◆	◆	◆	◆
Secondary Amines													
FENTAMINE® DA-CO	N-Cocoalkyl 1,3-propanediamines	61791-63-7	◆	◆		◆		◆	◆	◆	◆	◆	◆
FENTAMINE® DA-T	N-Tallowalkyl 1,3-propanediamines	61791-55-7	◆	◆		◆		◆	◆	◆	◆	◆	◆
Tertiary Amines													
FENTAMINE® DMA 1295	Dodecyl dimethylamine	112-18-5				◆		◆	◆	◆	◆	◆	◆
FENTAMINE® DMA 1695	Hexadecyl dimethylamine	112-69-6				◆		◆	◆	◆	◆	◆	◆
FENTAMINE® DMA 1895	Octadecyl dimethylamine	124-28-7				◆		◆	◆	◆	◆	◆	◆
FENTAMINE® DMA 0897	Octyl dimethylamine	7378-99-6				◆		◆	◆	◆	◆	◆	◆
Specialty Amines													
FENTAMINE® DMAPA	3-Dimethylamino 1-Propylamine	109-55-7	◆	◆			◆	◆	◆	◆	◆	◆	◆
FENTAMINE® DEAPA	3-Diethylamino 1-Propylamine	104-78-9	◆					◆	◆	◆	◆	◆	◆
FENTAMINE® MDEA	n-methyl diethanol amine	105-59-9			◆			◆	◆	◆	◆	◆	◆
Specialty Amine Ethoxylates													
FENTACARE® T02	Bis(2-Hydroxyethyl) tallowalkyl amine(2EO)	61791-44-4				◆	◆	◆	◆	◆	◆	◆	◆
FENTACARE® CO5	Cocoamine 5EO	61791-14-8				◆	◆	◆	◆	◆	◆	◆	◆
FENTACARE® CO2	Cocoamine 2EO	61791-14-8				◆	◆	◆	◆	◆	◆	◆	◆
RHODAMEEN® HT-50	Hydrogenated tallow amine ethoxylate	68783-22-2; 7732-18-5				◆	◆	◆	◆	◆	◆	–	–
RHODAMEEN® PN-430	Ethoxylated oleyl amine	58253-49-9				◆	◆	◆	◆	◆	◆	◆	◆
RHODAMEEN® VP532	Ethoxylated tallow amine	61791-26-2				◆	◆	◆	◆	◆	◆	◆	◆
Quaternary Amine													
FENTACARE® DHT 21 75	Di(hydrogenated Tallow) Dimethyl Ammonium Chloride	61789-80-8				◆		◆	◆	–	◆	◆	◆
Fatty Alkyl Tri and Tetra Amine													
FENTAMINE® DPTA- T	N1-Tallowalkyl dipropylenetriamines	61791-57-9				◆		◆	NE	◆	◆	◆	NE

◆ Listed | - Not listed | NE Not evaluated | ** Availability based on REACH registration

SOLVAY Way

The way we do business

Solvay puts into practice a sustainable development policy called **Solvay Way** because we are convinced our future is dependent upon the responsible way in which we conduct our current activities — a way that reflects our commitment to each of our stakeholders. **Solvay Way** encompasses three interlinked, equally important spheres: the Environment Sphere, the People Sphere and the Economic Sphere.

Based on a framework of responsibilities, **Solvay Way** allows Solvay sites and businesses to conduct self—assessments of their practices and establish action plans that promote continuous progress. At Solvay, the way we do business creates sustainable value for all our stakeholders through innovation and partnership.

> Responsible Care is the chemical industry's voluntary continuous improvement initiative to promote safe handling of products. (1987)

> The UN's Global Compact aims to ensure that heads of companies promote and uphold 10 universal principles concerning human rights, Working Conditions, Respect for the environment and anti—corruption. (2003)

> The International Federation of Chemical, Energy, Mine and General Workers' Unions. (2005)

> Solvay Novecare has achieved world—wide ISO—9001 Quality Management System Multi—Site Certification. (2008)

SOLVAY
asking more from chemistry®

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