

# Connecting our chemistries creating shared values

Intermediates



# Global manufacturing footprint

## World-class technology

AkzoNobel Surface Chemistry is the leader in nitrogen based chemistry. We are a member of the world-wide AkzoNobel group.

### Global reach, local focus

We offer a wide range of products based on our core technologies; nitrogen derivatives based on fatty acids and specialty ethoxylates.

Based on our world-class nitrile technology, we supply standard fatty amines as building blocks for the production of chemicals such as ethoxylates, sulphosuccinamates, amphoteric and amides.

### Our strengths

Many of our customers depend on specific chemical interactions to achieve a desired performance characteristic. With our broad range of products, in-depth knowledge of surface chemistry and experience with several different application technologies, we are the partner for successful development in your chosen applications areas.



### Core Principles

Surface Chemistry takes care of its responsibilities, provides regulatory compliant products and operates globally with high integrity and strong focus on HSE compliance.

### Customer Focused

Global reach delivered in a personable manner via local connections. Global manufacturing footprint with scale advantage to support customers increasing demand.

### Deliver on Commitments

Trustworthy, dependable supply chain and quality assurance.

### Passion for Excellence

Proven product performance for decades. Accurate, reliable and fast response delivered to our clients.

### Winning Together

Connecting our chemistries – Creating shared values.

#### Headquarters

Chicago, USA  
Stenungsund, Sweden  
Shanghai, China

#### Manufacturing

Boxing, China  
Chattanooga, USA  
Houston, USA  
Fort Worth, USA  
Itupeva, Brazil  
Mons, Belgium  
Morris, USA  
Ningbo, China  
Saskatoon, Canada  
Singapore  
Stenungsund, Sweden  
Stockvik, Sweden

#### R&D Centers

Brewster, NY, USA  
Bridgewater, USA  
Chattanooga, USA  
Houston, USA  
Deventer, The Netherlands  
Itupeva, Brazil  
Mumbai, India  
Singapore  
Shanghai, China  
Stenungsund, Sweden





# Our winning product portfolio

## Primary Amines

Product	Description	Standard specifications			Typical data			
		Primary amine, %	Total amine mg KOH/g	Colour Gardner	Appearance at 20°C	Melting range, °C	Density at 60°C kg/m <sup>3</sup>	Viscosity at 60° mPa.s
Armeen 12D	Dodecyl amine, distilled	min 98% (Mw=185)	295-306	max 1	white solid	20-29	780	4
Armeen 18	Octadecyl amine	min 95% (Mw=269)	200-213	max 1	white solid	46-60	790	7
Armeen 18D	Octadecyl amine, distilled	min 98% (Mw=269)	190-213	max 1	white solid	47-60	790	7
Armeen C	Cocoalkyl amine	min 95% (Mw=200)	266-287	max 4	pale yellow liquid	15-20	780	4
Armeen CD	Cocoalkyl amine, distilled	min 98% (Mw=200)	265-295	max 2	pale yellow liquid	13-18	780	4
Armeen HT	Hydrogenated tallowalkyl amine	min 95% (Mw=263)	202-217	max 3	pale yellow solid	40-56	790	4
Armeen HTD	Hydrogenated tallowalkyl amine, distilled	min 95% (Mw=263)	209-224	max 2	white solid	40-56	790	4
Armeen O	Oleyl amine	min 95% (Mw=265)	201-215	max 4	liquid to paste	8-23	790	12 at 25°C
Armeen OD	Oleyl amine, distilled	min 95% (Mw=265)	207-217	max 4	liquid to paste	8-23	790	12 at 25°C
Armeen OPD	Oleyl/Palmalkyl amine, distilled	min 98% (Mw=265)	207-216	max 1	liquid to paste	8-24	790	12 at 25°C
Armeen OVD	Oley(vegetable oil) amine, distilled	min 98% (Mw=267)	202-215	max 1	light yellow liquid	8-24	790	12 at 25°C
Armeen SVD	Soyaalkyl amine, distilled	min 98% (Mw=273)	208-218	max 2	light/solid at 25°C	26	810	13 at 25°C
Armeen T	Tallowalkyl amine	min 95% (Mw=262)	203-217	max 4	light yellow paste	30-40	790-800	4
Armeen TD	Tallowalkyl amine, distilled	min 98% (Mw=262)	205-225	max 2	white paste	30-40	790-800	4

Specifications are subject to change without notice

## Secondary Amines

Product	Description	Standard specifications			Typical data			
		Secondary amine, %	Total amine mg KOH/g	Colour Gardner	Appearance at 20°C	Melting range, °C	Density at 60°C kg/m <sup>3</sup>	Viscosity at 60° mPa.s
Armeen 2HT	Di(hydrogenated tallowalkyl) amine	min 90% (Mw=509)	107-116	max 2	white solid	60-72	800 at 70°C	14 at 70°C

Specifications are subject to change without notice

## Ethoxylates Amines

Product	Description	Standard specifications			Typical data				
		Equivalent mass g/eq	Tertiary amine, %	Colour Gardner	Appearance at 20°C	Pour point, °C	Clear point, °C	Density at 20°C kg/m <sup>3</sup>	Viscosity at 20° mPa.s
Ethomeen C/12	Bis(2-hydroxyethyl) cocoalkyl amine	275-300	min 97%	max 4	liquid	8	12	910	135
Ethomeen C/15	Cocoalkyl amine ethoxylate	408-440	min 98%	max 10	liquid	-7 to -5	0	975	150
Ethomeen C/17	Cocoalkyl amine ethoxylate	n.a.	min 98%	max 2	liquid	n.a.	n.a.	975	n.a.
Ethomeen C/22	Cocoalkyl amine ethoxylate	n.a.	min 96%	max 12	liquid	-5	n.a.	1030	200
Ethomeen C/25	Cocoalkyl amine ethoxylate	826-901	n.a.	max 10	liquid	< 0	10	1045	200
Ethomeen HT/12	Hydrogenated tallowalkylbis (2-hydroxyethyl) amine ethoxylate	338-360	min 97%	max 300 Hazen	solid	43	44	870 at 50°C	42 at 50°C
Ethomeen O/12	Bis(2-hydroxyethyl) oleyl amine ethoxylate	343-365	min 96%	max 6	liquid/paste	-5 to 1	-5 to 4	905	150
Ethomeen T/12	Tallowalkyl bis(2-hydroxyethyl) amine ethoxylate	340-360	min 96%	max 8	liquid/paste	30-32	30-32	890 at 35°C	75 at 35°C
Ethomeen T/15	Tallowalkyl amine ethoxylate	470-506	min 98%	max 10	liquid/paste	8-13	18	907	160
Ethomeen T/20	Tallowalkyl amine ethoxylate	684-726	min 98%	max 9	liquid/paste	3	n.a.	1000	220
Ethomeen T/25	Tallowalkyl amine ethoxylate	869-952	min 99%	max 8	liquid/paste	5	15	1030	300

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## Quaternary Ammonium Salts

Product	Description	Standard specifications			Typical data				
		Free amine+ amine.HCl, %	Colour Gardner	Appearance at 20°C	Melting range, °C	Density at 60°C kg/m <sup>3</sup>	Viscosity at 60° mPa.s	Flash point, °C	
Arquad 268-85	Di(C <sub>14-18</sub> ) alkyl dimethyl ammonium chloride, 2-propanol	83-87% (Mw=577)	Max 1.8% (Mw=526/562.5)	max 5	white to off white paste	46-49	850	110	25°C DIN 51755
Arquad 2HT-75	Di(hydrogenated tallow) dimethyl ammonium chloride, 2-propanol	74-76% (Mw=573.5)	Max 2% (Mw=523/559.5)	max 4	white to off white paste	30-40	880 at 20°C	70	25°C DIN 51755
Arquad 2HT-75E	Di(hydrogenated tallow) dimethyl ammonium chloride, ethanol	74-77% (Mw=573)	Max 2% (Mw=523/559.5)	max 4	white to off white paste	35-45	838 at 20°C	55	25°C
Arquad 2HT-82E	Di(hydrogenated tallow) dimethyl ammonium chloride, ethanol	82% (Mw=573)	Max 2% (Mw=523/559)	max 7	white to off white paste	36-49	850	110	37.8°C PMCC
Arquad 2HT-85	Di(hydrogenated tallow) dimethyl ammonium chloride, 2-propanol	83-87% (Mw=573)	Max 2% (Mw=523/559.5)	max 5	white to off white paste	46-49	850	110	25°C

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# Creating more value from fewer resources

We realize that our future depends on our ability to do radically more with less. So we're taking a major leap forward to connect value creation to resource efficiency.

It's a dynamic and committed approach to sustainability which will drive innovation and enable us to better serve our customers and our markets.

Welcome to Planet Possible.  
Our commitment to doing more with less.

[www.akzonobel.com/planetpossible](http://www.akzonobel.com/planetpossible)



**20%**

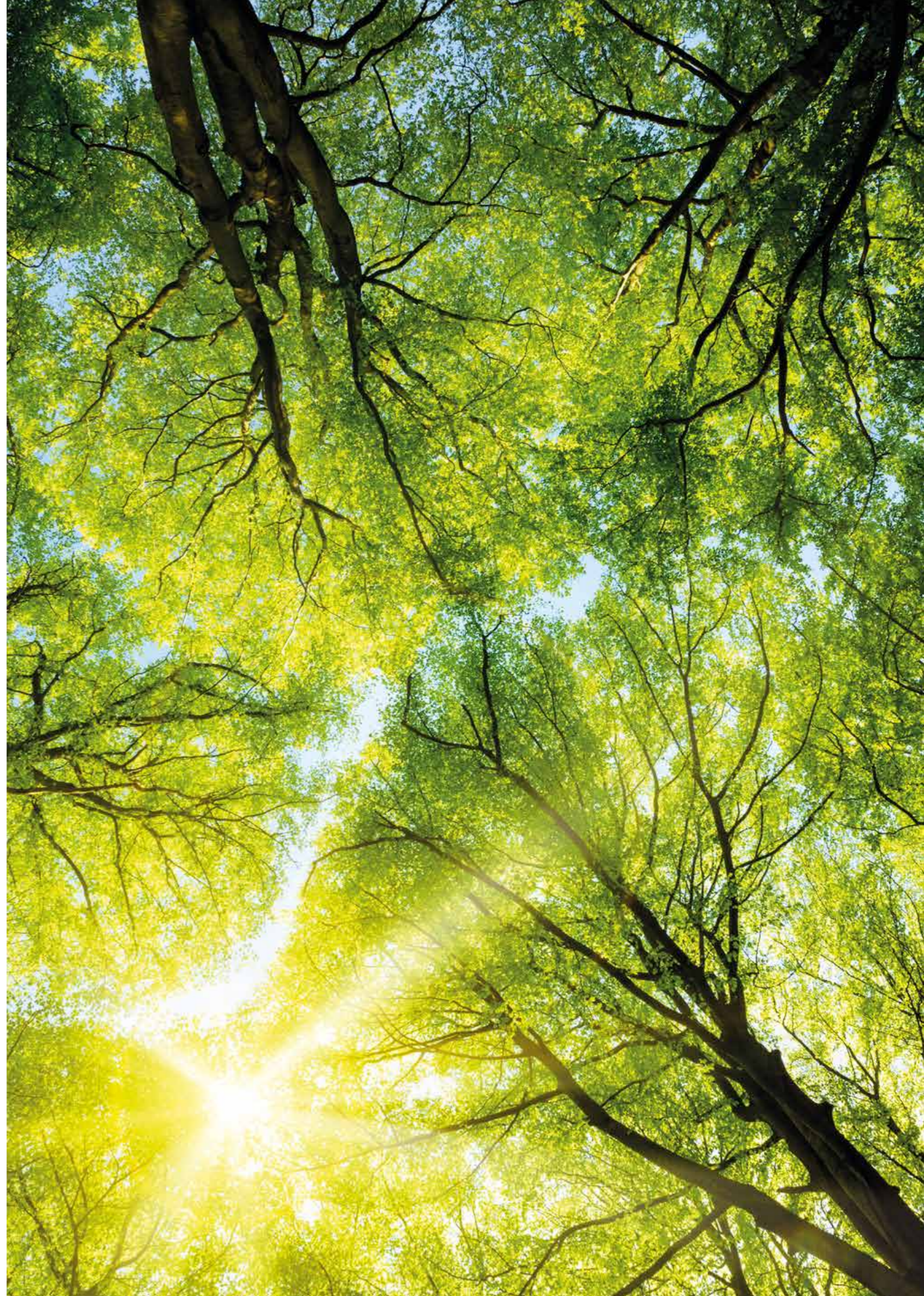
of revenue by 2020 from products that are more sustainable for our customers than those of our competitors

**25-30%**

more efficient resource and energy use across the entire value chain by 2020 (measured by carbon footprint reduction)

**€REI**

(Resource Efficiency Index)  
A new financial indicator measuring more value from fewer resources





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