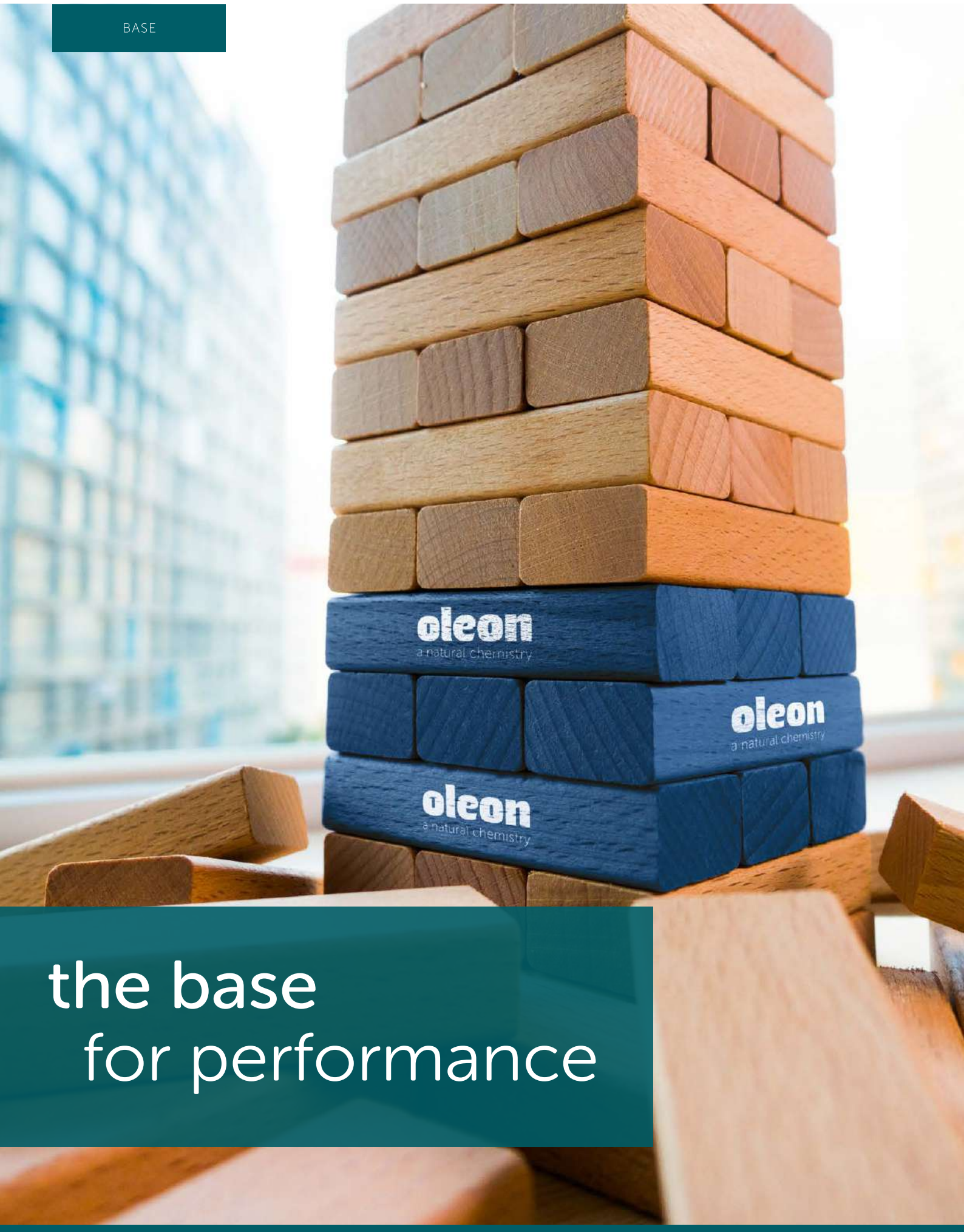
www.oleon.com

oleon
a natural chemistry

BASE



the base for performance

oleon
a natural chemistry

Starting from natural, renewable raw materials, Oleon manufactures a broad range of natural chemicals with various characteristics to cater for many application needs. We offer environmentally friendly and biodegradable ingredients for your processes.

°1950
Founded in the 1950's

+500.000
tons/year

market share of
25%
in europe

6
production plants

+900
employees

11 offices
in Europe, USA and Asia

Oleon is one of the leading producers of oleochemicals since the 1950s. We are specialized in converting natural fats and oils into a wide range of oleochemical products, such as fatty acids, glycerine, fatty esters, dimers, technical oils, specialty oleochemicals and biodiesel.

OLEON
OUR VISION

"To be a leading global provider of OLEOCHEMICAL SOLUTIONS to our clients worldwide by focusing on customer intimacy, innovation and sustainable development, while providing our employees with a safe and stimulating work environment."

Avril

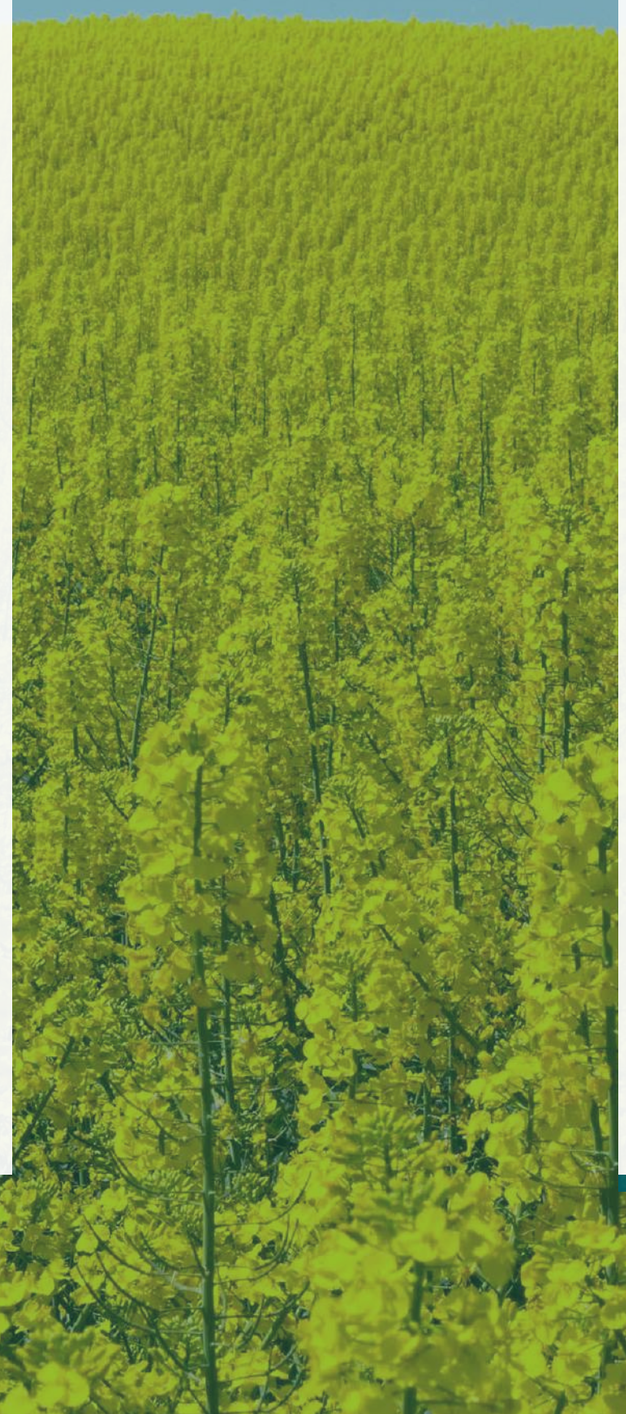
Since January 2009, Oleon n.v. has been incorporated in the AVRIL GROUP, a leading financial and industrial organization active in the vegetable oils and proteins sector, with activities in food, feed, biofuels and oleochemistry. Consequently, Oleon has joined a group that is involved in the entire oilseed sector -from seed to all of its end products- and that is firmly committed to the development of oleochemistry.

THE BASE
FOR PERFORMANCE

Oleochemicals are used for their functional properties such as chemical reactivity, lubricity, stabilization of emulsions, etc. The industry also attaches great value to the fact that most oleochemicals are completely non-toxic and safe.

Oleon's oleochemicals are used in all industrial sectors. They are the base raw material to manufacture e.g. soaps, candles and resins. They are also used as additives to enhance the properties of end products such as lubricants, cosmetics, food and crop protection. Oleochemicals are the auxiliary raw materials in processes such as the de-inking of old paper, the production of plastic objects or oil drilling.

These are just a few examples of the wide range of industries using oleochemicals in one or multiple processes.



CORPORATE
SOCIAL RESPONSIBILITY

Since 2015, Oleon has a tailor-made sustainability policy with SMART objectives and indicators. This policy is based on strong involvement of all our stakeholders to continuously improve our impact on the environment, the well-being of our people and the financial stability of our company.

>90%
renewable raw materials

yearly targets for
CO_2
emission reduction

strong
SAFETY CULTURE

RSPO MEMBER
Since 2007
RSPO-1106013

COMMUNITY INVOLVEMENT
CSR initiatives

COLLABORATIVE PLATFORMS
Ecovadis, sedex & CDP.

Continuous
ENERGY REDUCTION

GLYCERINE

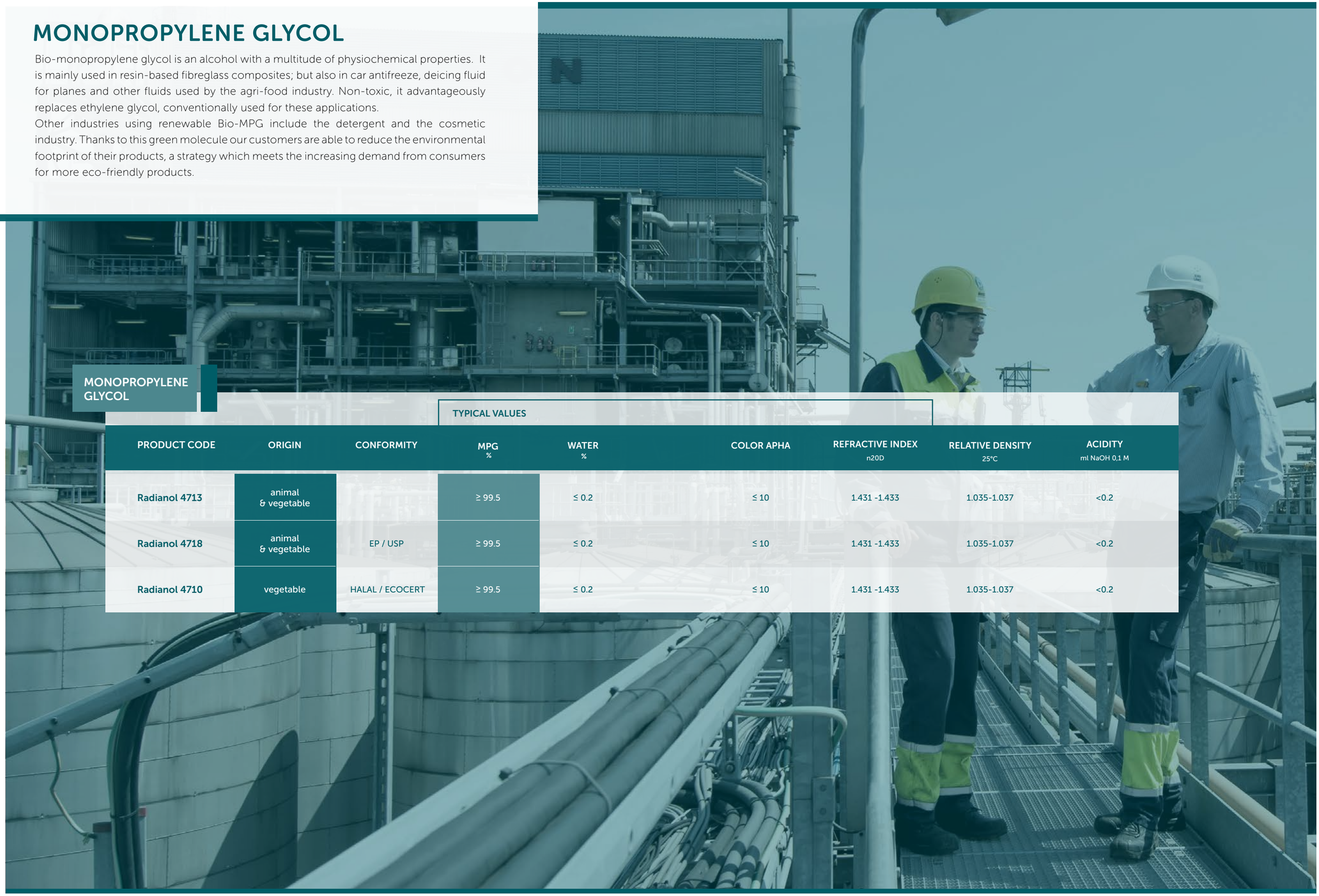
The applications of natural glycerine are based on a unique combination of properties: glycerine is a colorless and odorless hygroscopic, non-toxic and non-irritant viscous liquid with plasticizing and lubricating properties and it contains three free hydroxyl groups, supplying chemical functionality. Many personal care products contain glycerine: all types of creams, lotions, gels, sticks, toothpaste, mouth wash, make-up products, etc.
Glycerine is also used in food products to prevent dehydration, improve softness and flexibility, enhance texture or adjust viscosity.
Oleon's glycerine meets the requirements of the American, European, and Japanese pharmacopoeias. Our vegetable glycerine products are GMP, CEP, Ecocert, FSSC 22000, GMP +, non-GMO, Kosher and Halal certified.

NATURAL **GLYCERINE**

PRODUCT CODE	ORIGIN	CONFORMITY	TYPICAL VALUES GLYCEROL %	WATER %	COLOR APHA	REFRACTIVE INDEX n20D	IMPURITY A & RELATED SUBSTANCES
Food **Glycerine 4808/4808K**	vegetable / Kosher	E422 / FCC	≥ 99.7	≤ 0.3	≤ 10	1.473 -1.474	conform
Feed **Glycerine 4809**	vegetable	E422	≥ 99.7	≤ 0.3	≤ 10	1.473 -1.475	conform
Pharma **Glycerine 4810/4810K**	vegetable / Kosher	EP / USP / JP	≥ 99.7	≤ 0.3	≤ 10	1.473 -1.475	conform
Personal care **Glycerine 4811/4811K**	vegetable / Kosher	EP / USP	≥ 99.7	≤ 0.3	≤ 10	1.473 -1.475	conform
Other **Glycerine 4812/4812K**	vegetable / Kosher	EP	≥ 99.5	≤ 0.5	≤ 10	1.470 -1.475	conform
Food & Pharma **Glycerine 4827/4827K**	vegetable / Kosher	EP / JP / E422	84 - 87	13 - 16	≤ 10	1.449 -1.454	conform
Technical **Glycerine 4818**	animal & vegetable		≥ 99.8	≤ 0.2	≤ 10	1.473-1.474	
Technical **Glycerine 4813**	animal & vegetable		≥ 99.5	≤ 0.5	≤ 10	1.473-1.474	
Technical **Glycerine 4823**	animal & vegetable		86 - 88	12 - 14	≤ 10	1.452 - 1.455	

MONOPROPYLENE GLYCOL

Bio-monopropylene glycol is an alcohol with a multitude of physiochemical properties. It is mainly used in resin-based fibreglass composites; but also in car antifreeze, deicing fluid for planes and other fluids used by the agri-food industry. Non-toxic, it advantageously replaces ethylene glycol, conventionally used for these applications.
Other industries using renewable Bio-MPG include the detergent and the cosmetic industry. Thanks to this green molecule our customers are able to reduce the environmental footprint of their products, a strategy which meets the increasing demand from consumers for more eco-friendly products.



MONOPROPYLENE GLYCOL

TYPICAL VALUES

PRODUCT CODE	ORIGIN	CONFORMITY	MPG %	WATER %	COLOR APHA	REFRACTIVE INDEX n20D	RELATIVE DENSITY 25°C	ACIDITY ml NaOH 0,1 M
Radianol 4713	animal & vegetable		≥ 99.5	≤ 0.2	≤ 10	1.431 -1.433	1.035-1.037	<0.2
Radianol 4718	animal & vegetable	EP / USP	≥ 99.5	≤ 0.2	≤ 10	1.431 -1.433	1.035-1.037	<0.2
Radianol 4710	vegetable	HALAL / ECOCERT	≥ 99.5	≤ 0.2	≤ 10	1.431 -1.433	1.035-1.037	<0.2

POLYUNSATURATED FATTY ACIDS

Polyunsaturated fatty acids (PUFA) are derived from various vegetable oils such as rapeseed, soybean, sunflower and linseed oil. PUFA's are mainly used in the production of alkyd resin binder systems, but also in detergents. Via the Nouracid® and Radiacid® product ranges, Oleon offers a wide portfolio of PUFA's. Different fatty acid spectrums enable final product properties (e.g. film forming, drying, yellowing and viscosity) to be achieved.

PUFA

PRODUCT CODE	ORIGIN	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	COMPOSITION [%]				
		R	Y	[mg KOH/g]	[g I_2/100g]	C16	C18	C18:1	C18:2	C18:3
Radiacid 0166	rapeseed	≤ 2	≤ 15	196 - 204 *200*	110 - 120 *114*	*6*	*1.5*	*63*	*21*	*7*
Radiacid 0121	soybean	≤ 1	≤ 5	198 - 204 *201*	129 - 139 *135*	*11*	*4*	*24*	*52*	*7*
Nouracid SE45 *Radiacid 0259*	soybean	≤ 1	≤ 10	194 - 204 *200*	145 - 160 *153*	*3.5*	*1.5*	*28*	*60*	*7*
Nouracid HE30 *Radiacid 0130*	sunflower	≤ 1	≤ 10	198 - 202 *200*	130- 146 *200*	*6.5*	*3.5*	*27*	*59*	*traces*
Nouracid HE45 *Radiacid 0243*	sunflower	≤ 1	≤ 10	197 - 204 199	136 - 150 *143*	*3.5*	*1.5*	*29*	*62*	*traces*
Nouracid LD 65 *Radiacid 0552*	linseed	≤ 2	≤ 15	198 - 202 *201*	165 - 180 *170*	*6*	*3*	*26*	*24*	*37*
Nouracid LE80 *Radiacid 0520*	linseed	≤ 1.5	≤ 10	194 - 205 *200*	180 - 200 *187*	*6*	*4*	*22*	*18*	*48*
Nouracid BE10 *Radiacid 0145*	cotton type	≤ 2	≤ 20	199 - 205 *201*	95 - 110 *106*	*16*	*11*	*29*	*37*	*4*
Nouracid EE10 *Radiacid 0178*	peanut type	≤ 2	≤ 20	195 - 205 *200*	100 - 130 *117*	*9*	*3*	*46*	*36*	*4*
Nouracid IF40 *Radiacid 0587*	mixed vegetable	≤ 4.5	≤ 20	195 - 210 *201*	90 - 145 *130*	*10*	*6*	*35*	*30*	*15*
Radiacid 0143	safflower	≤ 1.5	≤ 15	195 - 204 *200*	135 - 160 *148*	*6.5*	*2.5*	*14*	*73*	*traces*

italic: typical values

DISTILLED FATTY ACIDS

Most commercially available fatty acids have been distilled. Blending and a certain degree of fractional distillation are used to adapt the chain length composition to the end users requirements. Radiacid® distilled fatty acids are intermediates for chemical synthesis and raw materials for the production of household, industrial and toilet soaps, heavy duty liquid detergents, non-siccative alkyd resins and many other products. The lubricating greases industry uses them to form metallic soaps in situ.

LAURICS

PRODUCT CODE	ORIGIN	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	COMPOSITION [%]									
		R	Y	[mg KOH/g]	[g I_2/100g]	C8	C10	C12	C14	C16	C16:1	C18	C18:1	C18:2	C18:3
Radiacid 0600	stripped coconut type FA	≤ 1	≤ 10	251 - 264 *258*	8 - 12 *9*	*traces*	*traces*	*56*	*22*	*10*		*2*	*7*	*2*	*traces*
Radiacid 0625	coconut type FA	≤ 2	≤ 20	265 277 *270*	7 - 11 *9*	*7*	*6*	*48*	*19*	*9*		*2,5*	*6*	*2*	*traces*

italic: typical values

TALLOW/PALM

PRODUCT CODE	ORIGIN	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	TITER	COMPOSITION [%]							
		R	Y	[mg KOH/g]	[g I_2/100g]	[°C]	C14	C16	C16:1	C18	C18:1	C18:2	C18:3	C20+C22
Radiacid 0402	tallow	≤ 1	≤ 10	201 - 209 *207*	50 - 58 *54*		*3*	*25*	*4*	*18*	*40*	*5*	*≤ 1*	*≤ 2*
Radiacid 0403	tallow	≤ 5	≤ 40	202 - 209 *206*	50 - 65 *56*	39 - 44 *41*	*3*	*25*	*4*	*17*	*39*	*7*	*≤ 2*	*≤ 2*
Radiacid 0431	tallow	≤ 2	≤ 20	204 - 210 *207*	33 - 43 *36*		*≤ 5*	*35*	*≤ 5*	*26*	*26*	*≤ 5*		*≤ 2*
Radiacid 0453	palm	≤ 1	≤ 10	206 - 211 *207*	48 - 58 *55*	43 - 48 *46*	*≤ 3*	*45*		*5*	*39*	*10*		*≤ 2*
Radiacid 0450	palm stearin	≤ 1	≤ 10	205 - 214 *211*	≤ 55 *32*			*62*		*5*	*22*	*6*		*≤ 2*

italic: typical values

OLEIC ACIDS

Radiacid® and Nouracid® oleic acids are used to produce soaps, detergents, textiles, printing inks, cosmetics, pharmaceuticals, etc. and they are intermediates for the synthesis of esters, salts, alkoxylates, epoxy stearates, dimer acids.

OLEIC ACIDS

PRODUCT CODE	ORIGIN	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	TITER	CLOUD POINT	COMPOSITION [%]						
		R	Y	[mg KOH/g]	[g I_2/100g]	[°C]	[°C]	≤ C14	C16	C16-1	C18	C18-1	C18-2	C18-3
Radiacid 0204	mixed	**≤ 3**	**≤ 20**	196 - 205	100 - 110		≤ 8		≤ 8	≤ 5	≤ 4	61 - 70	≤ 20	≤ 7
Radiacid 0208	mixed	**≤ 3**	**≤ 20**	197 - 205 *201*	92 - 99 *94*		≤ 6		≤ 6	≤ 7	≤ 3	67 - 73	7 - 15	≤ 3
Radiacid 0212	tallow	**≤ 1.5**	**≤ 10**	198 - 204 *201*	88 - 95 *93*		≤ 6	≤ 4	≤ 6	≤ 8	≤ 3	70 - 75	5 - 11	≤ 2,5
Radiacid 0230	tallow	**≤ 5**	**≤ 25**	195 - 203 *203*	80 - 90 *86*	25 - 30 *24*			*< 12*	*< 5*	*< 5*	56 - 65	≤ 16	< 3
Radiacid 0253	palm	**≤ 1.5**	**≤ 10**	195 - 204	92 - 103 *102*		≤ 6	≤ 4	≤ 6		≤ 2,5	≥ 70	≤ 20	*1*
Nouracid 1880 *Radiacid 0258*	palm kernel	≤ 0.6	≤ 6	197 - 204 *199*	87 - 100 *97*		≤ 10		*4*		*1.5*	*78*	*14*	*traces*
Nouracid 1885 *Radiacid 0215*	high oleic sunflower	≤ 1	≤ 10	195 - 205 *199*	85 - 95 *92*		*12*		*4*		*3*	*81*	*9*	*traces*
Radiacid 0137	high oleic sunflower	≤ 1	≤ 10	195 - 205 *199*	85 - 95 *89*		*8*		*2*		*1*	*92*	*2,5*	*traces*

italic: typical values

SATURATED & SEMI SATURATED FATTY ACIDS

Stearic acid is the name commonly used to describe fatty acids with a low amount of unsaturated acids in which palmitic and stearic acids (C16 - C18) are predominant. Stearic acids are used in plastic lubrication, textile auxiliaries, maintenance products, in chemical synthesis of metal salts, esters, nitrogen compounds, high-melt waxes, etc., for the manufacture of candles and as hydrophobic coating agents.
Stearic acids are lubricants for plastics used in the packaging of food and raw materials and for the production of food additives and industrial household fatty esters, metal stearates, non-drip high-quality candles, shaving sticks, cosmetic soaps, cosmetics and pharmaceuticals, waxes, etc.

VEGETABLE

PRODUCT CODE	ORIGIN	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	TITER	COMPOSITION [%]					
		R	Y	[mg KOH/g]	[g I_2/100g]	[°C]	≤ C14	C16	C18	C18-1	C20	C22
Radiacid 0417	palm	≤ 0.3	≤ 2	205 - 211 *208*	≤ 1 *0.6*	54 - 57 *55*	*≤ 2*	*45*	*53*		≤ 2	
Radiacid 0445	palm	≤ 0,5	≤ 5	203 - 209 *205*	≤ 2		*≤ 3*	*43*	*54*		≤ 2	
Radiacid 0419	palm / palm stearin	≤ 0.3	≤ 1.5	206 - 211 *208*	≤ 1 *0.5*	54 - 57 *56*	*≤ 2*	*49*	*49*		≤ 2	
Radiacid 0464	palm stearin	≤ 0.3	≤ 2	209 - 214 *211*	≤ 1 *0,5*	54 - 56 *55*	*≤ 4*	*60*	*38*		≤ 2	
Radiacid 0414	mixed vegetable	≤ 0.5	≤ 2	202 - 209 *205*	≤ 1 *0.7*	57 - 61 *58*	*≤ 3*	*33*	*64*		≤ 2	
Radiacid 0165	rapeseed	≤ 1	≤ 10	196 - 201	≤ 1	63 - 67 *65*	*≥ 87*	*10*	*87*		≤ 5	
Radiacid 0075	high erucic rapeseed	≤ 3	≤ 30	178 - 190 *182*	≤ 3 *2*	58 - 64 *63*		≤ 50 *5*	*38*		≥ 50 *10*	*47*

italic: typical values

SATURATED & SEMI SATURATED FATTY ACIDS

TALLOW

PRODUCT CODE	ORIGIN	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	TITER	COMPOSITION [%]					
		R	Y	[mg KOH/g]	[g I_2/100g]	[°C]	≤ C14	C16	C18	C18-1	C20	C22
Radiacid 0407	tallow	≤ 0.5	≤ 2.5	200 - 210 *205*	≤ 1 *0.5*	57 - 61 *58*	*≤ 4*	*30*	*64*			*≤ 2*
Radiacid 0411	tallow	≤ 0.3	≤ 2	202 - 208 *205*	≤ 1 *0.8*	58 - 61 *59*	*≤ 4*	*30*	*64*			*≤ 2*
Radiacid 0436	tallow	≤ 0.3	≤ 2	204 - 210 *208*	≤ 1 *0.7*	54 - 58 *57*	*≤ 4*	*38*	*56*			*≤ 2*
Radiacid 0435	mixed	≤ 0.3	≤ 2	206 - 210 *208*	≤ 1 *0,6*	54 - 56 *55*	*≤ 4*	*46*	*50*			*≤ 2*
Radiacid 0423	mixed	≤ 0.3	≤ 2	208 - 212 *210*	≤ 1 *0.5*	54 - 56 *55*		*52*	*44*			*≤ 2*
Radiacid 0444	rubber grade	≤ 7	≤ 50	196 - 211 *204*	≤ 8 *5*	53 - 62 *55*		*93*				*≤ 10*
Radiacid 0408	rubber grade tallow	≤ 20	≤ 50	197-211 *205*	≤ 7 *4*	53 - 62 *58*		*30*	*64*			*≤ 2*

SEMI-SATURATED

PRODUCT CODE	ORIGIN	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	TITER	COMPOSITION [%]			
		R	Y	[mg KOH/g]	[g I_2/100g]	[°C]	≤ C14	C16	C18	C18-1
Radiacid 0506	tallow	≤ 1	≤ 5	203 - 209 *206*	38 - 47 *43*	43 - 47 *46*	≤ 4	26 - 35 *30*	20 - 30 *23*	33 - 43 *38*
Radiacid 0438	vegetable	≤ 0.8	≤ 5	205 - 211 *209*	33 - 43 *40*	44 - 48 *46*	≤ 4	40 - 50 *46*	8 - 16 *12*	30 - 40 *38*

italic: typical values

FRACTIONADED FATTY ACIDS

Radiacid® short-chain fatty acids caproic (C6), caprylic (C8) and capric (C10) are used as a raw material for the manufacturing of surfactants, acid chlorides, flavor and fragrances, lubricants, biocides, coating resins and solvents. Radiacid® middle chain fatty acids contain different stearic acid concentrations.
Radiacid® and Nouracid® long-chain fatty acids contain a high percentage of C20 and C22 fatty acids. The Radiacid® long-chain fatty acid product range contain high levels of Behenic (C22) acid in the range of 85 to 90 %. The main applications are detergents and surfactants, wax emulsifiers, foam control additives, high melting esters and soaps. The Nouracid® long-chain fatty acid product range contains a high level of erucic (C22:1) acid. The main applications are lubricants, erucamide, surfactants, oil & gas field chemicals and long chain alcohols.

SHORT CHAIN

PRODUCT CODE	ORIGIN	PRODUCT TYPE	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	TITER	COMPOSITION [%]		
			R	Y	[mg KOH/g]	[g I_2/100g]	[°C]	C6	C8	C10
Radiacid 0605	vegetable	caproic acid hexanoic acid	≤ 0.5	≤ 2	472-484 *477*	≤ 2.5	*-4*	≥ 97.5		
Radiacid 0606	vegetable	caproic acid hexanoic acid	≤ 0.3	≤ 1.5	476-484 *481*	≤ 1	*-4*	≥ 99		
Radiacid 0608	vegetable	caprylic acid octanoic acid	≤ 0.5	≤ 2	386-390 *389*	≤ 0.35	*16*		≥ 99	
Radiacid 0610	vegetable	capric acid decanoic acid	≤ 0.5	≤ 2	323-328 *326*	≤ 0.5	*31*			≥ 99
Radiacid 0640	vegetable	caprylic/capric acid octanoic/decanoic acid	≤ 1.5	≤ 15	386-390	≤ 0.5	*6*		*60*	*40*

MIDDLE CHAIN

PRODUCT CODE	ORIGIN	PRODUCT TYPE	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	TITER	COMPOSITION [%]
			R	Y	[mg KOH/g]	[g I_2/100g]	[°C]	C18
Radiacid 0150	vegetable	stearic acid	≤ 1.5	≤ 10	196 - 201 *199*	≤ 3 *1.2*	*65*	≥ 80
Radiacid 0151	vegetable	stearic acid	≤ 1	≤ 10	196 - 201 *198*	≤ 1 *0,6*	*67*	≥ 90
Radiacid 0152	vegetable	stearic acid	≤ 1	≤ 10	195 - 201 *198*	≤ 2 *0.6*	65 - 69 *67*	≥ 92
Radiacid 0154	vegetable	stearic acid	≤ 1	≤ 10	195 - 201 *199*	≤ 1 *0.5*	65 - 69 *67*	≥ 94

LONG CHAIN

PRODUCT CODE	ORIGIN	PRODUCT TYPE	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	TITER	COMPOSITION [%]						
			R	Y	[mg KOH/g]	[g I_2/100g]	[°C]	C16	C18	C20	C20-1	C22	C22-1	C22-2
Radiacid 0560	vegetable	behenic acid	≤ 1	≤3.5	162 - 168 *166*	≤ 2 *1.0*	74 - 79 *78*	*< 2*	*< 5*	*< 9*		≥ *85*	*< 1*	
Nouracid RE07 *Radiacid 0566*	vegetable	erucic Acid	≤ 1	≤ 10	162 - 170 *166*	72 - 80 *76*	*30*	*traces*	*traces*	*traces*	*1.5*	*1.5*	≥ 90	*1.5*

italic: typical values

LONG CHAIN FATTY ACIDS

Radiacid® and Nouracid® long chain fatty acids contain a high percentage of C20 and C22 fatty acids. The Radiacid® long chain fatty acid product range contain high levels of Behenic (C22) acid ranging from 50 to 90 %. Main applications are detergents and surfactants, wax emulsifiers and foam control additives, high melting esters and soaps.
The Nouracid® long chain fatty acid product range contain high levels of Gadoleic (C20:1) and Erucic (C22:1) acid ranging from 10 to 90 %. Main applications are lubricants, erucamide, surfactants, oil & gas field chemicals.

LONG CHAIN

PRODUCT CODE	ORIGIN	PRODUCT TYPE	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	TITER	COMPOSITION [%]												
			R	Y	[mg KOH/g]	[g I_2/100g]	[°C]	C16	C18	C18:1	C18:2	C18:3	C20	C20:1	C20:2	C22	C22:1	C22:2	Sum C18	Sum C20	Sum C22
Nouracid RE09 *Radiacid 0160*	vegetable	high erucic distilled	≤ 2	≤ 20	175 - 185 *182*	95 - 115 *107*	*15*	*3*	*1*	*15*	*14*	*9*	*1*	*8*	*0.5*	*1*	*45*	*1*	*39*	*9*	*47*
Radiacid 0075	mixed	high erucic hydrogenated	≤ 3	≤ 30	178 - 190 *182*	≤ 3 *2*	58 - 64 *63*	*5*	*38*				*10*			*47*			*38*	*10*	*47*
Nouracid RE07 *Radiacid 0566*	vegetable	high erucic fractionated	≤ 1	≤ 10	162 - 170 *166*	72 - 80 *76*	30	*traces*	*traces*	*traces*	*traces*	*traces*	*traces*	*1.5*	*traces*	*1.5*	*≥ 90*	*1.5*			*91*
Radiacid 0560	vegetable	behenic acid	≤ 1	≤3,5	162 - 168 *166*	≤ 2 *1,0*	74 - 79 *78*	*< 2*	*< 5*				*<9*			*≥ 85*	*< 1*		*<5*	*<9*	*88*
Nouracid RD40 *Radiacid 0516*	vegetable	mix fatty acid C18 C22	≤ 2.5	≤ 25	190 - 205 *198*	120 -150 *136*		*6*	*2*	*29*	*28*	*16*	*1*	*11*	*1*	*traces*	*4*	*traces*	*75*	*13*	*4*
Nouracid RD2005 *Radiacid 0072*	vegetable	mix fatty acid C18 C22	≤ 2	≤ 20	180 - 205 *195*	115 - 145 *130*		*5*	*2*	*25*	*25*	*14*	*1.5*	*17*	*1.5*	*traces*	*7*	*traces*	*66*	*17*	*7*
Nouracid RD3030 *Radiacid 0076*	vegetable	mix fatty acid C18 C22	≤ 2	≤ 20	175 - 195 *185*	≤ 120 *107*		*3*	*1*	*15*	*8*	*8*	*2*	*23*	*2*	*traces*	*29*	*traces*	*32*	*27*	*29*
Nouracid RD5025 *Radiacid 0564*	vegetable	mix fatty acid C20 C22	≤ 2	≤ 20	160 - 190 *179*	60 - 100 *90*		*traces*	*0.5*	*5*	*5*	*4*	*5*	*42*	*4*	*0.5*	*31*	*0.5*	*14*	*51*	*31*
Nouracid RD5050 *Radiacid 0077*	vegetable	mix fatty acid C20 C22	≤ 2	≤ 20	160 - 190 *176*	60 - 100 *83*		*traces*	*0.5*	*2.5*	*2.5*	*2*	*4*	*40*	*3*	*1*	*42*	*1*	*2*	*47*	*44*

italic: typical values

CONJUGATED FATTY ACIDS

Conjugated poly unsaturated fatty acids are based on our PUFA products range where the product is modified by an additional treatment (conjugation). Conjugated PUFA's are widely used in the production of alkyd resin binder systems where the higher reactivity is mainly used to modify the drying properties of the coating resin. Main applications are high quality alkyd resins, epoxy resins and water-based alkyd resins.

CONJUGATED FA

PRODUCT CODE	ORIGIN	PRODUCT TYPE	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	COMPOSITION [%]					
			R	Y	[mg KOH/g]	[g I_2/100g]	C16	C18	C18:1	C18:2	C18:3	C18 CONJ
Nouracid DE402	vegetable	dehydrated castor oil fatty acid	≤1	≤10	195 - 201 *199*	140 - 154 *149*	*5*	*3*	*18*	*46*	*1*	*26*
Nouracid DE503	vegetable	dehydrated castor oil fatty acid	≤1	≤10	196 - 200 *198*	145 - 157 *153*	*4*	*2.5*	*16*	*42*	*1*	*33*
Nouracid DE554	vegetable	dehydrated castor oil fatty acid	≤ 1	≤ 10	194 - 200 *198*	150 - 162 *158*	*3*	*2*	*13*	*37*	*traces*	*42*
Nouracid DE655	vegetable	dehydrated castor oil fatty acid	≤1	≤10	193 - 198 *197*	155 - 166 *163*	*2.5*	*2*	*10*	*31*	*traces*	*51*
Nouracid DE656	vegetable	dehydrated castor oil fatty acid	≤ 1	≤ 10	193 - 198 *197*	163 - 173 *168*	*2*	*2*	*7*	*26*	*traces*	*62*
Nouracid HE301	vegetable	sunflower oil fatty acid conjugated	≤1	≤10	198 - 202 *200*	132 - 142 *138*	*7*	*4*	*26*	*49*	*traces*	*14*
Nouracid HE303	vegetable	sunflower oil fatty acid conjugated	≤1	≤10	198 - 203 *200*	125 - 135 *132*	*7*	*4.5*	*26*	*25*	*traces*	*35*
Nouracid HE304	vegetable	sunflower oil fatty acid conjugated	≤1	≤10	198 - 202 *200*	125 - 135 *133*	*7*	*4.5*	*26*	*19*	*traces*	*41*
Nouracid HE305	vegetable	sunflower oil fatty acid conjugated	≤ 1	≤ 10	198 - 202 *200*	125 - 138 *136*	*7*	*4*	*26*	*10*	*traces*	*51*
Nouracid HE456	vegetable	sunflower oil fatty acid conjugated	≤ 1	≤ 10	196 - 204 *200*	135 - 155 *144*	*3.5*	*1.5*	*29*	*5*	*traces*	*60*
Nouracid SE305	vegetable	soybean oil fatty acid conjugated	≤ 1	≤ 10	198 - 203 *201*	125 - 140 *134*	*11*	*4*	*25*	*4*	*traces*	*53*

italic: typical values

CASTOR OIL DERIVATIVES

Ricinoleic acid (12-hydroxy-octadec-9-enic acid - C18:1-OH) is extracted from castor oil for its specific properties as fatty acid with a hydroxyl group on the fatty acid carbon chain. Ricinoleic acid is used as raw material in polyurethane resins, lubricants, emulsifiers and surfactants. Polymerized ricinolate is a stabilized form of ricinoleic acid which is mainly used in lubricant applications. Ricinoleic acid methyl esters or castor oil methyl esters find their application as solvent in agro applications and as raw material for polyurethane resins.

CASTOR OIL

PRODUCT CODE	ORIGIN	PRODUCT TYPE	COLOR	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	HYDROXY VALUE	COMPOSITION [%]					
			[Gardner]	R	Y	[mg KOH/g]	[g I_2/100g]	[mg KOH/g]	C16	C18	C18:1	C18:2	C18:3	C18:1 OH
Nouracid CE80 *Radiacid 0529*	vegetable	polymerized ricinoleic acid	≤ 15			47.5 - 52.5 *50*	*94*	*39*	*1*	*1*	*4*	*5*	*traces*	*85*
Nouracid CZ80 *Radiacid 0199*	vegetable	ricinoleic acid	≤ 2			≥ 175 *185*	*90*	≥ 150 *160*	*1*	*1*	*4*	*5*	*traces*	*85*
Radiacid 0197	vegetable	ricinoleic acid	≤ 10			≥ 175 *180*	*90*	≥ 150 *160*	*1*	*1*	*4*	*5*	*traces*	*85*
Radia 7081	vegetable	castor oil methyl ester		≤ 5	≤ 20	≤ 1	*86*	*152*	*1*	*1*	*4*	*5*	*traces*	*85*

italic: typical values

TOFA ALTERNATIVES

Oleon offers a range of TOFA (tall oil fatty acids) countertypes that are based on renewable vegetable oils. These products have good color and color stability, low odor and zero rosin content. The fatty acid composition of the Oleon products is highly comparable to TOFA.

TOFA FA

PRODUCT CODE	ORIGIN	PRODUCT TYPE	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	COMPOSITION [%]				
			R	Y	[mg KOH/g]	[g I_2/100g]	C16	C18	C18:1	C18:2	C18:3
Radiacid 0121	vegetable	soybean oil fatty acid	≤ 1	≤ 5	198 - 204 *201*	129 - 139 *135*	11	4	24	52	7
Radiacid 0128	vegetable	soybean oil fatty acid	≤ 1	≤ 10	196 - 204 *200*	140 - 160 *148*	3	4.5	28	58	7
Radiacid 0201	vegetable	soybean oil fatty acid	≤ 3	≤ 30	195 - 205 *200*	140 - 155 *150*	2.5	1.5	29	59	7
Nouracid RF10 *Radiacid 0514*	vegetable	mix fatty acid	≤ 1.5	≤ 15	195 - 205 *200*	140 - 160 *143*	7	2.5	36	32	18

italic: typical values

FOOD & FEED GRADE FATTY ACIDS

The food & feed grade Radiacid® polyunsaturated fatty acids are used as raw material for the manufacturing of various emulsifiers, food esters, lecithin and other food products. The Radiacid® range consists of products based on rapeseed oil, sunflower oil, high oleic sunflower oil, safflower oil and soybean oil, all having their specific fatty acid distribution. Products with a low trans fatty acid content, low saturated fatty acid content and other tailor made products can be manufactured on request.

The food grade Radiacid® short chain fatty acids are used as raw material for the manufacturing of flavor and fragrances and as ingredients for the feed industry.
The feed grade Radiacid® short chain fatty acids are used as additives for various segments in the feed sector.

FOOD & FEED FA

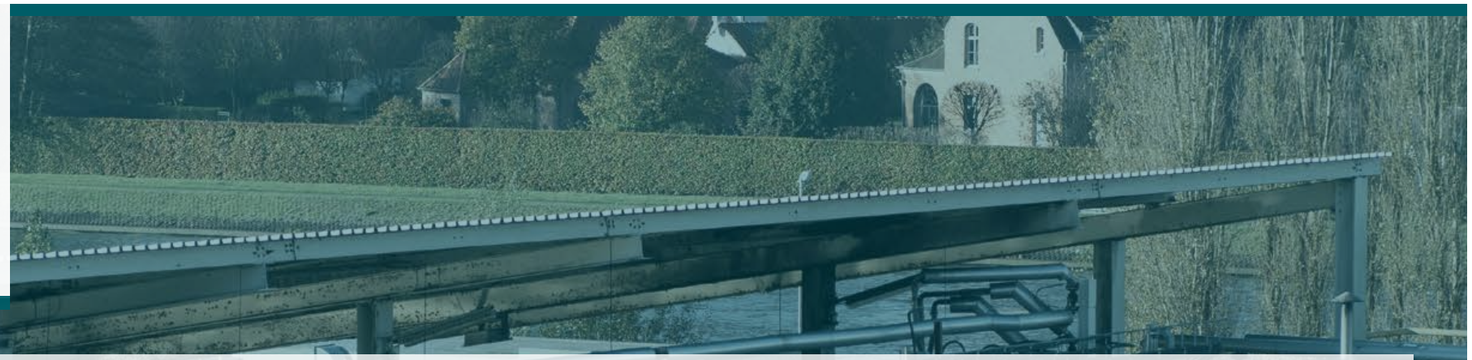
PRODUCT CODE	ORIGIN	PRODUCT TYPE	COLOR LOV 5 1/4 "		ACID VALUE	IODINE VALUE	COMPOSITION [%]				
			R	Y	[mg KOH/g]	[g I_2/100g]	C16	C18	C18:1	C18:2	C18:3
Radiacid 0122	vegetable	soybean oil fatty acid	≤ 1	≤ 10	198 - 203 *201*	129 - 139 *135*	9 - 12 *11*	≤ 6 *4*	20 - 29 *24*	47 - 58 *52*	4 - 10 *7*
Radiacid 0124	vegetable	soybean oil fatty acid identity preserved grade	≤ 1	≤ 10	198 - 203 *201*	129 - 139 *135*	9 - 12 *11*	≤ 6 *4*	20 - 29 *24*	47 - 58 *52*	4 - 10 *7*
Radiacid 0132	vegetable	sunflower oil fatty acid	≤ 1	≤ 10	198 - 203 *200*	127 - 143 *138*	4 - 9 *6.5*	≤ 6 *3.5*	15 - 31 *26*	56 - 67 *62*	≤ 1 *traces*
Radiacid 0134	vegetable	high oleic sunflower oil fatty acid	≤ 1	≤ 10	195 - 205 *199*	85 - 95 *92*	≤ 6 *4*	≤ 7 *3.5*	≥ 80 *85*	≤ 10 *5*	≤ 1 *traces*
Radiacid 0137	vegetable	high oleic sunflower oil fatty acid	≤ 1	≤ 10	195 - 205 *199*	85 - 95 *89*	≤ 4 *2*	≤ 3 *1*	≥ 90 *92*	≤ 5 *2.5*	≤ 1 *traces*
Radiacid 0141	vegetable	safflower oil fatty acid	≤ 1	≤ 15	195 - 204	135 - 160	≤ 8 *4*	≤ 3	≤ 14	≥ 70	≤ 1
Radiacid 0163	vegetable	rapeseed oil fatty acid	≤ 1.5	≤ 15	198 - 203 *199*	111 - 123 *119*	4 - 7 *5*	≤ 4 *1.5*	56 - 65 *61*	18 - 25 *20*	6 - 11 *10*

italic: typical values

DIMER ACIDS & ALCOHOLS

Dimer acids, bifunctional acids derived from rapeseed fatty acid, are mainly used as polymer building blocks or rheology modifiers. Dimer acids contribute to the heat and hydrolytic stability, water repellency and pigment wetting properties of the final polymers (polyamides, polyesters, epoxy resins) based on these natural polymerized fatty acids.

Dimer diol offers high bifunctionality as a building block for polyester and polyurethane coatings, adhesives and elastomers. It provides good color, water repellency, flexibility, thermo-oxidative stability and outstanding hydrolysis/chemical resistance to C.A.S.E. products.



DIMER ACIDS

PRODUCT CODE	PRODUCT TYPE	COLOR Gardner	COLOR APHA(Hazen)	ACID VALUE [mg KOH/g]	WATER %	DYNAMIC VISCOSITY at 25°C cP	COMPOSITION [%] MONOMER + INTER-MEDIATES	COMPOSITION [%] DIMER	COMPOSITION [%] TRIMER	IODINE VALUE [g I_2/100g]	FLASH POINT °C	FIRE POINT °C	RELATIVE DENSITY at 25°C
Radiacid 0950	dimer acid	≤ 8 *7*		190 - 197 *194*	≤ 0.10 *0.01*	7500 - 9000 *8250*	1 - 3 *2*	79 - 85 *82*	13 - 19 *16*		> 270	> 300	0.95
Radiacid 0951	dimer acid	≤ 8 *7*		190 - 197 *193*	≤ 0.10 *0.01*	6000 - 8000 *6800*	2 - 4 *3*	84 - 90 *86*	9 - 12.5 *11*		> 270	> 300	0.95
Radiacid 0955	dimer acid	≤ 9 *7*		185 - 195 *191*	≤ 0.10 *0.01*	3800 - 4200 *4000*	9 - 16 *12*	70 - 80 *74*	9 - 16 *14*		> 270	> 300	0.95
Radiacid 0959	dimer acid	≤ 8 *7*		189 - 197 *191*	≤ 0.10 *0.01*	7500 - 9500 *9200*	1 - 2.5 *2*	78 - 85 *80*	17 - 19 *18*		> 270	> 300	0.95
Radiacid 0960	hydrogenated dimer acid	≤ 3 *2*		188 - 197 *194*	≤ 0.10 *0.01*	8000 - 9000 *8250*	1 - 4 *3*	85 - 95 *86*	8 - 12 *11*	≤ 15 *9,5*	> 270	> 300	0.95
Radiacid 0970	high purity dimer acid	≤ 5 *3*		188 - 198 *195*	≤ 0.10 *0.01*	5500 - 6500 *6000*	0.3 - 0.7 *0.5*	≥ 94.0 *96.7*	2.6 - 3.1 *2.8*		> 270	> 300	0.95
Radiacid 0972	high purity dimer acid	≤ 3 *1*		194 - 198 *197*	≤ 0.10 *0.01*	5000 - 7000 *5700*	≤ 0.5 *0.4*	≥ 98.5 *99.0*	≤ 1.0 *0.6*		> 270	> 300	0.95
Radiacid 0975	hydrogenated high purity dimer acid		≤ 100 *50*	190 - 198 *195*	≤ 0.10 *0.01*	6000 - 8000 *7000*	≤ 2.0 *1.0*	≥ 95.0 *96.2*	≤ 3.0 *2.8*	≤ 10 *8*	> 270	> 300	0.95
Radiacid 0976	hydrogenated high purity dimer acid		≤ 100 *35*	194 - 198 *195*	≤ 0.10 *0.01*	6000 - 7000 *6500*	≤ 1.0 *0.5*	≥ 98.5 *99.0*	≤ 1.0 *0.5*	≤ 10 *7*	> 270	> 300	0.95
Radiacid 0977	hydrogenated high purity dimer acid		≤ 100 *50*	190 - 198 *195*	≤ 0.10 *0.01*	6000 - 7500 *7000*	1.3 - 1.7 *1.5*	≥ 94.5 *95.5*	2.8 - 3.5 *3.0*		> 270	> 300	0.95
Radiacid 0978	hydrogenated high purity dimer acid		≤ 150 *120*	194 - 198 *197*	≤ 0.10 *0.01*	≥ 6500 *7000*	≤ 0.1 *0.1*	≥ 98.9 *99.8*	≤ 1.0 *0.1*		> 270	> 300	0.95

DIMER ALCOHOLS

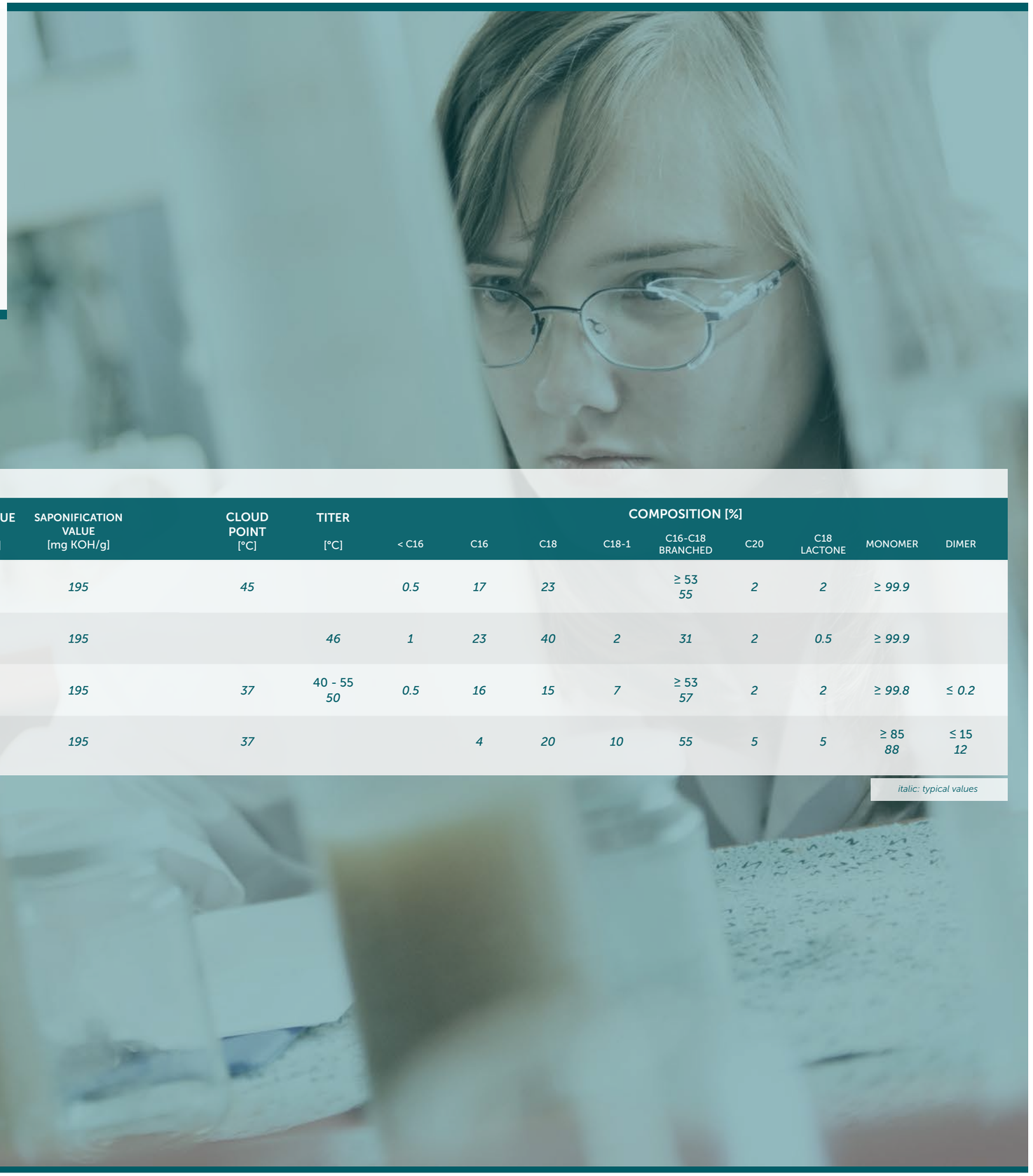
PRODUCT CODE	PRODUCT TYPE	COLOR APHA(Hazen)	ACID VALUE [mg KOH/g]	WATER %	DYNAMIC VISCOSITY at 25°C cP	COMPOSITION [%] MONOMER + INTERMEDIATES	COMPOSITION [%] DIMER	COMPOSITION [%] TRIMER	IODINE VALUE [g I_2/100g]	SAPONIFICATION VALUE mg KOH/g	HYDROXYL VALUE mg KOH/g	RELATIVE DENSITY at 25°C
Radianol 1990	dimer diol C.A.S.E.	≤ 50 *30*	≤ 0.10 *0.01*	≤ 0.10 *0.01*	2500	≤ 1.0 *0.3*	≥ 98.0 *99.2*	≤ 1.0 *0.5*	≤ 10 *7*	≤ 2.0 *0.1*	202 - 212 *208*	0.90
Radianol 1991	dimer diol Health & Beauty	≤ 50 *15*	≤ 0.10 *0.01*	≤ 0.10 *0.01*	2500	≤ 0.2 *0.1*	≥ 99.5 *99.9*	≤ 0.3 *0.0*		≤ 2.0 *0.1*	202 - 212 *208*	0.90

italic: typical values

MONOMER ACIDS

Monomer acids and its derivatives can create a particular added value to specific application areas such as the candle, paper and lubricating industry. All these products contain a branched fatty acid fraction resulting in very particular physical properties in the end product.

Radiacid 0944 and 0946 : the crystalline characteristics of a high-hydrogenated stearine (low iodine value) can be better controlled with a fraction of branched molecules. On top, these stearines show optimal burning rates and has minimal soothing.
Radiacid 0945, in which branched chain properties are combined with straight carbon chains (partly unsaturated), is used in the lubricating industry.
Radiacid 0937 is used in paper chemicals (AKD) and textile lubricants.



MONOMER ACIDS

PRODUCT CODE	PRODUCT TYPE	COLOR LOV 5 1/4 "		COLOR	ACID VALUE	IODINE VALUE	SAPONIFICATION VALUE	CLOUD POINT	TITER	COMPOSITION [%]								
		R	Y	[Gardner]	[mg KOH/g]	[g I_2/100g]	[mg KOH/g]	[°C]	[°C]	< C16	C16	C18	C18-1	C16-C18 BRANCHED	C20	C18 LACTONE	MONOMER	DIMER
Radiacid 0937	stearic monomer	≤ 1	≤ 5		185 - 200 *191*	≤ 2 *1*	*195*	*45*		*0.5*	*17*	*23*		≥ 53 *55*	*2*	*2*	≥ *99.9*	
Radiacid 0944	stearic monomer	≤ 2	≤ 15		185 - 200 *190*	≤ 5 *1.5*	*195*		*46*	*1*	*23*	*40*	*2*	*31*	*2*	*0.5*	≥ *99.9*	
Radiacid 0967	monomer			≤ 2	185 - 200 *189*	*50*	*195*	*37*	40 - 55 *50*	*0.5*	*16*	*15*	*7*	≥ 53 *57*	*2*	*2*	≥ *99.8*	≤ *0.2*
Radiacid 0968	monomer			≤ 3	180 - 190 *184*	*40*	*195*	*37*			*4*	*20*	*10*	*55*	*5*	*5*	≥ 85 *88*	≤ 15 *12*

italic: typical values

BRANCHED FATTY ACIDS

Isostearic acid the ideal fatty acid that combines the liquidity of an oleic acid with the stability of a stearic acid. This is a saturated, branched, vegetable fatty acid based upon rapeseed fatty acid that resists oxidation and associated changes in colour or odour. The branched structure of isostearic acid also enhances the dispersing power and the low cloud point combined with high stability makes it attractive for cosmetic, personal care, lubricant, metalworking and textile additive applications.

ISOTEARIC ACIDS

PRODUCT CODE	PRODUCT TYPE	COLOR [APHA (HAZEN)]	ACID VALUE [mg KOH/g]	IODINE VALUE [g I_2/100g]	SAPONIFICATION VALUE [mg KOH/g]	CLOUD POINT [°C]	WATER [°C]	COMPOSITION [%]						
								< C16	C16	C18	C18-1	C16-C18 BRANCHED	C20	C18 LACTONE
Standard **Radiacid 0907**	isostearic acid	≤ 250 *125*	≥ 180 *189*	≤ 8 *6*	190 - 200 *195*	≤ 8 *6*	0.20	1.5	7	3	1	87	0.3	0.2
Cosmetic **Radiacid 0908**	isostearic acid	≤ 100 *50*	≥ 187 *191*	≤ 3 *2.5*	190 - 200 *195*	≤ 9 *6.5*	0.10	1.5	7	3	0.8	87	0.3	0.1
Cosmetic **Radiacid 0909**	isostearic acid	≤ 100 20	190 - 197 *193*	≤2 *1*	193 - 200 *195*	≤ 5 *2.5*	0.15	1	5.5	2.5	0.7	90	0.3	0.0

italic: typical values

SPECIALTY ALCOHOLS

Specialty alcohols are products with one or multiple hydroxy groups per molecule. These products can be used in polyurethane and as polyester binder or in coating systems.

SPECIALTY ALCOHOLS

PRODUCT CODE	ORIGIN	PRODUCT TYPE	COLOR		ACID VALUE [mg KOH/g]	HYDROXY VALUE [mg KOH/g]	VISCOSITY [d.Pas]	VISCOSITY °C	WATER [°C]	MOLECULAR WEIGHT	FUNCTIONALITY
Nouracid CZ80 *Radiacid 0199*	vegetable	ricinoleic acid	≤ 2	Gardner	≥ 175 *185*	≥ 150 *160*	*2*	30 °C	≤ 0.5	*290*	*0.85*
Radia 7081	vegetable	castor oil methyl ester	≤ 5	Gardner	≤ 1 *0,5*	*152*	*0.3*	20 °C	≤ 0.1 *0.05*	*310*	*0.85*
Radianol 1980	vegetable	isostearyl alcohol	≤ 10 *3*	APHA	≤ 0.1 *0.01*	200 - 215 *207*	*0.3*	20 °C	≤ 0.5 *0.05*	*270*	*1*
Radianol 1990	vegetable	dimer diol C36	≤ 50 *25*	APHA	≤ 0.1 *0.03*	202-212 *208*	*25*	25 °C	≤ 0.1 *0.5*	*570*	*2*
Nourypol 200	vegetable	polyol vegetable oil based	≤ 5 *2*	Gardner	≤ 1.5 *1*	195-220 *211*	≤ 4 *3*	20 °C	≤ 0.2 *0.1*	*500*	*2*

italic: typical values

KETONES

Ketones are widely used in various flavor & fragrance applications. The odor of the Radia® ketones range is from rose and citrus to fresh sweet. All Radia® ketones are produced based on renewable raw materials. The high product quality is safeguarded by the in-house production of the main raw materials and a certified HACCP system.
Methyl Nonyl Ketone is also applied as active ingredient in insect, cat and dog repellants.

KETONES

PRODUCT CODE	ORIGIN	PRODUCT TYPE	CAS #	FEMA #	PHYSICAL FORM	COLOR [APHA]	ACID VALUE [mg KOH/g]	ASSAY %
Radia MNKE	vegetable	methyl nonyl ketone 2-undecanone	112-12-9	3093	solid	*50*	≤ 1 *0.6*	≥ 97.5 *99.8*
Radia EAKE	vegetable	ethyl amyl ketone 3-octanone	106-68-3	2803	liquid	*50*	≤ 1 *0.5*	≥ 98 *99.7*
Radia MHKE	vegetable	methyl heptyl ketone 2-nonanone	821-55-6	2785	liquid	*50*	≤ 2 *0.6*	≥ 97.5 *99.8*

italic: typical values

VITAMIN F

PRODUCT CODE	ORIGIN	PRODUCT TYPE	COLOR [Gardner]	ACID VALUE [mg KOH/g]	IODINE VALUE [g I_2/100g]	PEROXIDE [meq O_2/kg]	COMPOSITION [%] C16	C18	C18:1	C18:2	C18:3	C18 CONJ
Vitamin F/EE	vegetable	vitamin F ethyl ester	≤ 2 *0.4*	≤ 1 *0.3*	145 - 155 *150*	≤ 3 *1*	*9*	*4*	18 - 24 *22*	31 - 37 *35*	28 - 34 *30*	
Vitamin F/SP60	vegetable	vitamin F ethyl ester	≤ 1 *0.7*	193 - 198 *196*	165 - 173 *170*	≤ 3 *1.1*	*1.5*	*1.4*	max. 7 *6*	22 - 29 *26*	max. 2 *0.6*	60 - 67 *63*

italic: typical values

VITAMIN F

The product name Vitamin F describes a group of fatty acids currently better know as essential fatty acids. Vitamin F is mainly applied in cosmetic applications like skin moisturizers.

MODIFIED OILS

Modified oils are vegetable oils from which the viscosity is increased by means of polymerisation (stand oil) or oxidation (blown oil). Modified oils are widely used in the production of coatings, lubricants and printing inks. The portfolio ranges from stand and blown oils based on soybean, linseed and rapeseed oil. The Modified Oils can be supplied in a wide range of viscosities. Customized viscosities can be supplied on request.

STAND OILS

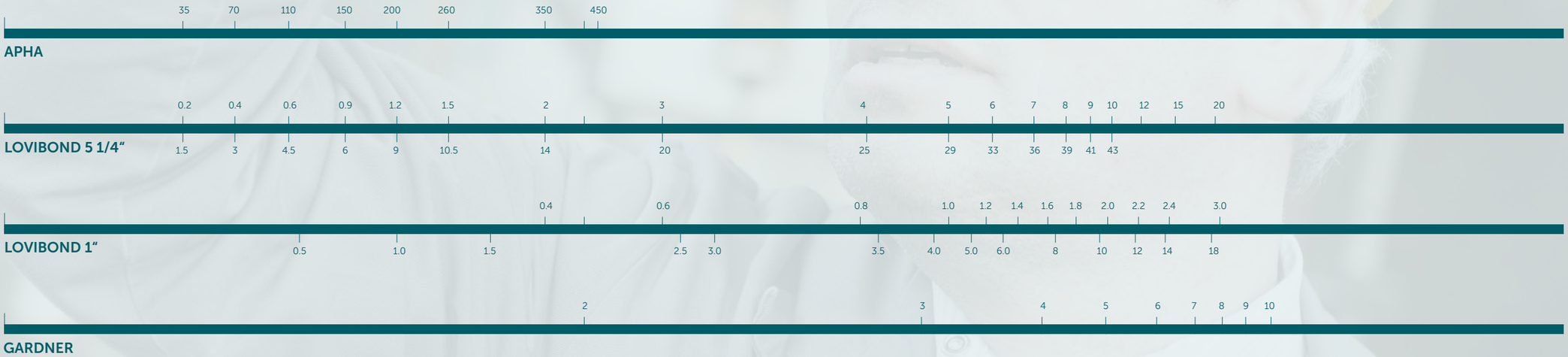
PRODUCT CODE	PRODUCT TYPE	COLOR [Gardner]	ACID VALUE [mg KOH/g]	VISCOSITY at 20°C [d.Pas]
SEH 77 2 P	soybean stand oil	≤ 5	≤ 10	1.5 - 2.5
SEH 77 7 P	soybean stand oil	≤ 5	≤ 10	6 - 8
SEH 77 30 P	soybean stand oil	≤ 6	≤ 10	28 - 32
SEH 77 50 P	soybean stand oil	≤ 6	≤ 10	48 - 52
SEH 77 110 P	soybean stand oil	≤ 6	≤ 10	104 - 116
LEM 577 1,4P	linseed stand oil	≤ 5	≤ 4	1.2 - 1.6
LEM 577 5P	linseed stand oil	≤ 5	≤ 8	4 - 6
LEM 577 20P	linseed stand oil	≤ 5	≤ 8	19 - 21
LEM 577 40P	linseed stand oil	≤ 5	≤ 10	38 - 42
LEM 577 60P	linseed stand oil	≤ 5	≤ 10	57 - 63
LEM 577 90P	linseed stand oil	≤ 5	≤ 10	85 - 95
LEM 577 200P	linseed stand oil	≤ 6	≤ 15	190 - 210
LEM 577 800P	linseed stand oil	≤ 6	≤ 16	760 - 840

BLOWN OILS

PRODUCT CODE	PRODUCT TYPE	COLOR [Gardner]	ACID VALUE [mg KOH/g]	VISCOSITY at 20°C [d.Pas]	VISCOSITY at 40°C [d.Pas]	VISCOSITY at 40°C [Centi Stokes]
REM 8 1,6 P	blown rapeseed oil	≤ 8	≤ 5	1.4 - 1.8	2	20
REM 8 8 P	blown rapeseed oil	≤ 10	≤ 12	7.5 - 8.5	3	220
REM 8 15 P	blown rapeseed oil	≤ 10	≤ 20	14 - 16	5	400
REM 8 25 P	blown rapeseed oil	≤ 10	≤ 20	24 - 26	7	650
REM 8 30 P	blown rapeseed oil	≤ 10	≤ 20	28.5 - 31.5	8	800
REM 8 56 P	blown rapeseed oil	≤ 12	≤ 20	53 - 59	13	1450
REM8 100 P	blown rapeseed oil	≤ 15	≤ 18	90 - 110	22	2220

COLOR CONVERSION TABLE

COLOR STANDARDS COMPARISON CHARTS



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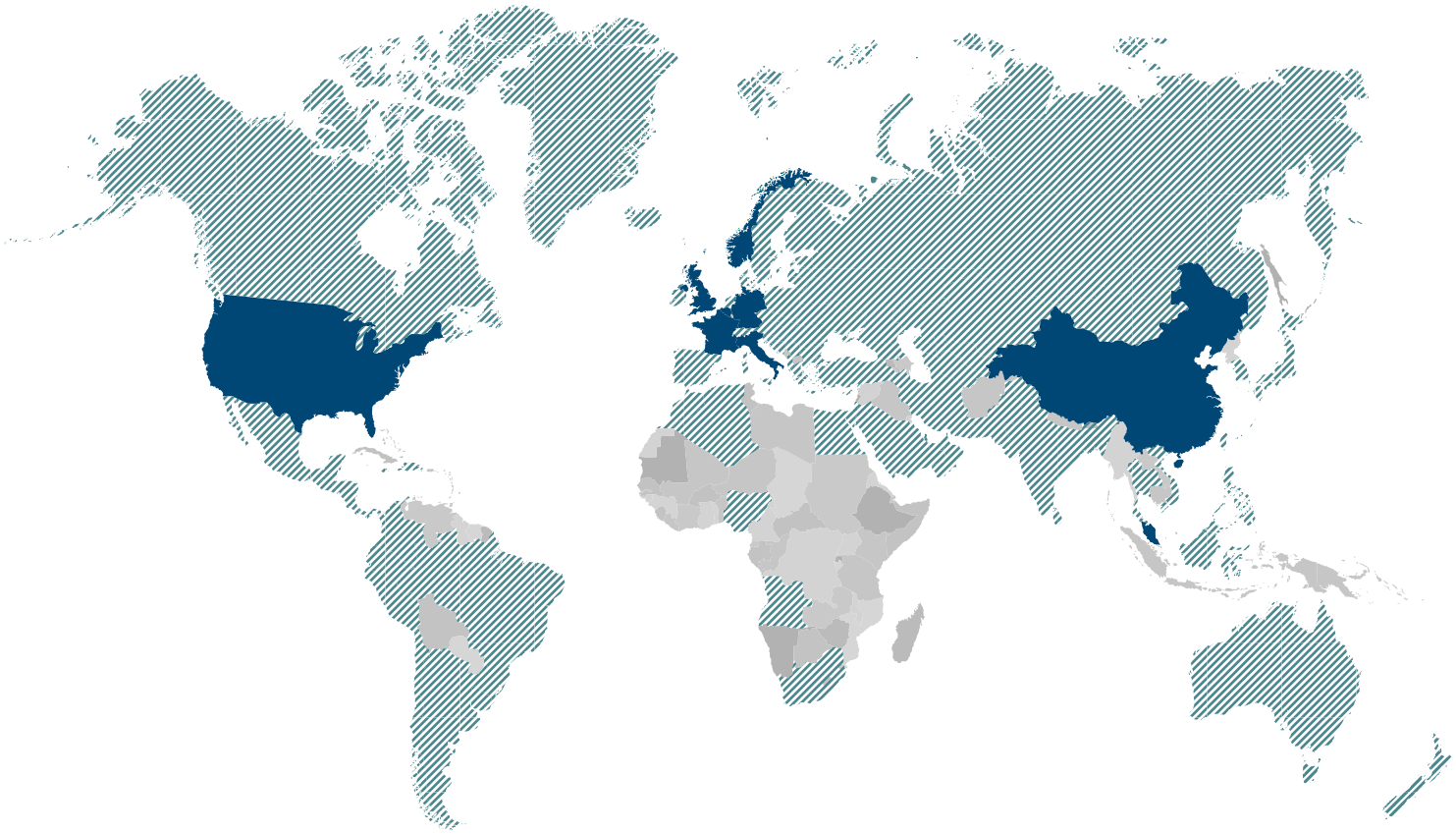
BASE



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