

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Revision Date 19-Mar-2024 Revision Number 3

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: Polyethylene glycol-lithium acetate solution

Cat No. : J62213

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals. Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company

Avocado Research Chemicals Ltd. (Part of Thermo Fisher Scientific)

Shore Road, Heysham Lancashire, LA3 2XY, United Kingdom

Office Tel: +44 (0) 1524 850506 Office Fax: +44 (0) 1524 850608

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Based on available data, the classification criteria are not met

Environmental hazards

Based on available data, the classification criteria are not met

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Full text of Hazard Statements: see section 16

2.2. Label elements

None required

EUH210 - Safety data sheet available on request

2.3. Other hazards

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Water	7732-18-5	231-791-2	58.78	-
Polyethylene glycol	25322-68-3		40	-
Acetate, lithium, dihydrate	6108-17-4		1.02	Eye Irrit. 2 (H319)
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-, hydrochloride	1185-53-1	EEC No. 214-684-5	0.16	-
Ethylenediaminetetraacetic acid, disodium salt dihydrate	6381-92-6	613-386-6	0.04	Acute Tox. 4 (H332) STOT RE 2 (H373)

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get

medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention

immediately if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if

symptoms occur.

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur.

Self-Protection of the First Aider No special precautions required.

4.2. Most important symptoms and effects, both acute and delayed

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None reasonably foreseeable.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Carbon dioxide (CO 2). Powder. Water spray. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products

Nitrogen oxides (NOx), Hydrogen chloride, Lithium oxide, Sodium oxides.

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required.

6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

Hygiene Measures

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Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2. Conditions for safe storage, including any incompatibilities

Keep refrigerated.

Technical Rules for Hazardous Substances (TRGS) 510 Class 12 Storage Class (LGK) (Germany)

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s):

Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects local (Oral)	Acute effects systemic (Oral)	Chronic effects local (Oral)	Chronic effects systemic (Oral)
Ethylenediaminetetraacetic				DNEL = 25 mg/kg
acid, disodium salt dihydrate				
6381-92-6 (0.04)				

Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Polyethylene glycol				DNEL = 112mg/kg
25322-68-3 (40)				bw/day
1,3-Propanediol,				DNEL = 216.6mg/kg
2-amino-2-(hydroxymethyl)-,				bw/day
hydrochloride				
1185-53-1 (0.16)				

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Polyethylene glycol 25322-68-3 (40)				DNEL = 40.2mg/m ³
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-, hydrochloride 1185-53-1 (0.16)				DNEL = 152.8mg/m ³
Ethylenediaminetetraacetic acid, disodium salt dihydrate 6381-92-6 (0.04)	DNEL = 3 mg/m ³	DNEL = 3 mg/m ³	DNEL = 0,6 mg/m ³	DNEL = 1,5 mg/m ³

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Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Polyethylene glycol	PNEC = 0.273g/L	PNEC = 1030mg/kg	PNEC = 1mg/L		PNEC = 46.4 mg/kg
25322-68-3 (40)		sediment dw			soil dw
Ethylenediaminetetraacetic	PNEC = 2,5 mg/l				PNEC = 1,1 mg/kg
acid, disodium salt					
dihydrate					
6381-92-6 (0.04)					

Component	Marine water	Marine water	Marine water	Food chain	Air
		sediment	intermittent		
Polyethylene glycol	PNEC = 27.3mg/L	PNEC = 103mg/kg	PNEC = 0.1mg/L		
25322-68-3 (40)		sediment dw			
Ethylenediaminetetraacetic	PNEC = 0.25 mg/l				
acid, disodium salt					
dihydrate					
6381-92-6 (0.04)					

8.2. Exposure controls

Engineering Measures

None under normal use conditions.

Personal protective equipment

Eye Protection Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber Nitrile rubber Neoprene PVC	See manufacturers recommendations	-	EN 374	(minimum requirement)

Skin and body protection Long sleeved clothing.

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Respiratory Protection No protective equipment is needed under normal use conditions.

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits

are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particle filter

Small scale/Laboratory use Maintain adequate ventilation

No information available. **Environmental exposure controls**

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Liquid

Appearance

Odor
Odor No information available
No data available
Melting Point/Range No data available
Softening Point No data available
Boiling Point/Range No information available
Flammability (liquid) No data available

Flammability (solid,gas) Not applicable Liquid

Explosion Limits No data available

Flash Point No information available Method - No information available

Autoignition TemperatureNo data availableDecomposition TemperatureNo data availablepHNo information availableViscosityNo data available

Water Solubility Miscible

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)
Component log Pow
1,3-Propanediol, -3.6

2-amino-2-(hydroxymethyl)-,

hydrochloride

Vapor Pressure 23 hPa @ 20 °C Density / Specific Gravity No data available

Bulk DensityNot applicableLiquidVapor DensityNo data available(Air = 1.0)

Particle characteristics Not applicable (liquid)

9.2. Other information

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous PolymerizationNo information available.Hazardous ReactionsNone under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

None known.

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10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Hydrogen chloride. Lithium oxide. Sodium oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

(a) acute toxicity;

OralBased on available data, the classification criteria are not metDermalBased on available data, the classification criteria are not metInhalationBased on available data, the classification criteria are not met

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	ı
Polyethylene glycol	LD50 = 22 g/kg (Rat)	LD50 > 20 g/kg (Rabbit)	-
1,3-Propanediol,	OECD 425 (Rat)	OECD 402 (Rat)	-
2-amino-2-(hydroxymethyl)-, hydrochloride	LD50 > 5000 mg/kg bw	LD50 > 5000 mg/kg bw	

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available Skin No data available

Component	Test method	Test species	Study result
Polyethylene glycol	in vivo: Test method Human	Man	non-sensitising
25322-68-3 (40)	Repeat Insult Patch Test		
1,3-Propanediol,	OECD Test Guideline 406	guinea pig	non-sensitising
2-amino-2-(hydroxymethyl)-, hydrochloride			_
1185-53-1 (0.16)			

(e) germ cell mutagenicity; No data available

Component	Test method	Test species	Study result
Polyethylene glycol	OECD Test Guideline 471	in vivo	negative
25322-68-3 (40)			_
1,3-Propanediol,	OECD Test Guideline 471	Mammalian	negative
2-amino-2-(hydroxymethyl)-, hydrochloride	Bacterial Reverse Mutation Test	in vitro	_
1185-53-1 (0.16)			

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

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(i) STOT-repeated exposure: No data available

Target Organs No information available.

(j) aspiration hazard; No data available

Symptoms / effects,both acute and No information available.

delayed

11.2. Information on other hazards

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any

known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects May cause long-term adverse effects in the environment. Do not allow material to

contaminate ground water system.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Polyethylene glycol	LC50 > 100 mg/L 96h, (Poecilia	EC50 > 100 mg/L 48h, (Daphnia	EC50 > 100 mg/L 96h,
	reticulata) OECD Guideline 203	magna)	(Scenedesmus subspicatus)
		OECD Guideline 202	OECD Guideline 201
1,3-Propanediol,		Daphnia Magna	
2-amino-2-(hydroxymethyl)-, hydrochloride		EC50 >100 mg/L (48h)	ļ

Component	Microtox	M-Factor
1,3-Propanediol,	OECD 209	
2-amino-2-(hydroxymethyl)-, hydrochloride	EC50 > 1000 mg/L (3h)	

12.2. Persistence and degradability Product contains heavy metals. Discharge into the environment must be avoided. Special

pre-treatment is necessary

Persistence

based on information available, May persist.

Degradation in sewage treatment plant

Contains substances known to be hazardous to the environment or not degradable in waste

water treatment plants.

12.3. Bioaccumulative potential May have some potential to bioaccumulate

Component	log Pow	Bioconcentration factor (BCF)
1,3-Propanediol,	-3.6	No data available
2-amino-2-(hydroxymethyl)-, hydrochloride		

The product is water soluble, and may spread in water systems Will likely be mobile in the 12.4. Mobility in soil

environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB

assessment

No data available for assessment.

12.6. Endocrine disrupting

properties

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

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12.7. Other adverse effects
Persistent Organic Pollutant
Ozone Depletion Potential

This product does not contain any known or suspected substance This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused

Products

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Consult local, regional, and national hazardous waste regulations to

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ensure complete and accurate classification.

Contaminated Packaging Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use

empty containers.

European Waste Catalogue (EWC) According to the European Waste Catalog, Waste Codes are not product specific, but

application specific.

Other Information Waste codes should be assigned by the user based on the application for which the product

was used.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

ADR Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

IATA Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

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International Inventories

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Water	7732-18-5	231-791-2	-	-	X	X	KE-35400	X	-
Polyethylene glycol	25322-68-3	-	-	500-038-2	X	X	KE-20228	X	Х
Acetate, lithium, dihydrate	6108-17-4	-	-	-	ı	X	-		-
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-, hydrochloride	1185-53-1	214-684-5	1	-	Х	Х	KE-34819	Х	-
Ethylenediaminetetraacetic acid, disodium salt dihydrate	6381-92-6	-	-	-	X	X	-	-	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Water	7732-18-5	X	ACTIVE	X	-	X	Х	X
Polyethylene glycol	25322-68-3	Х	ACTIVE	Х	-	Х	Х	Х
Acetate, lithium, dihydrate	6108-17-4	=	-	-	-	Х	Х	Х
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-, hydrochloride	1185-53-1	Х	ACTIVE	Х	-	X	X	Х
Ethylenediaminetetraacetic acid, disodium salt dihydrate	6381-92-6	-	-	X	-	Х	Х	X

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

Authorisation/Restrictions according to EU REACH

Not applicable

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Water	7732-18-5	-	-	-
Polyethylene glycol	25322-68-3	-	-	-
Acetate, lithium, dihydrate	6108-17-4	-	-	-
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-, hydrochloride	1185-53-1	-	-	-
Ethylenediaminetetraacetic acid, disodium salt dihydrate	6381-92-6	-	-	-

Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Water	7732-18-5	Not applicable	Not applicable
Polyethylene glycol	25322-68-3	Not applicable	Not applicable
Acetate, lithium, dihydrate	6108-17-4	Not applicable	Not applicable
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-, hydrochloride	1185-53-1	Not applicable	Not applicable
Ethylenediaminetetraacetic acid, disodium salt dihydrate	6381-92-6	Not applicable	Not applicable

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

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Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

National Regulations

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification

Water endangering class = 1 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Polyethylene glycol	WGK1	
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-,	WGK1	
hydrochloride Ethylenediaminetetraacetic acid, disodium salt dihydrate	WGK2	

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Ethylenediaminetetraacetic acid, disodium salt dihydrate 6381-92-6 (0.04)	Prohibited and Restricted Substances		

15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H319 - Causes serious eye irritation

H332 - Harmful if inhaled

H373 - May cause damage to organs through prolonged or repeated exposure

Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

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EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances/EU List of Notified Chemical Substances

Substances List

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PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances NZIoC - New Zealand Inventory of Chemicals

IECSC - Chinese Inventory of Existing Chemical Substances **KECL** - Korean Existing and Evaluated Chemical Substances

WEL - Workplace Exposure Limit

TWA - Time Weighted Average IARC - International Agency for Research on Cancer

ACGIH - American Conference of Governmental Industrial Hygienists

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DNEL - Derived No Effect Level Predicted No Effect Concentration (PNEC)

RPE - Respiratory Protective Equipment LD50 - Lethal Dose 50% LC50 - Lethal Concentration 50% EC50 - Effective Concentration 50% POW - Partition coefficient Octanol:Water NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of ICAO/IATA - International Civil Aviation Organization/International Air Dangerous Goods by Road **Transport Association**

IMO/IMDG - International Maritime Organization/International Maritime MARPOL - International Convention for the Prevention of Pollution from Ships

Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound) **BCF** - Bioconcentration factor

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards On basis of test data **Health Hazards** Calculation method **Environmental hazards** Calculation method

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Prepared By Health, Safety and Environmental Department

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Revision Summary New emergency telephone response service provider.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet