

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

Creation Date 25-Aug-2010 Revision Date 19-Nov-2024 Revision Number 17

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

1.1. Product identifier

Product Description: Sodium hypochlorite solution

 Cat No.:
 S/5041/21

 Synonyms
 Antiformin

 Index No
 017-011-00-1

 CAS No
 7681-52-9

 EC No
 231-668-3

 Molecular Formula
 CI Na O

Unique Formula Identifier (UFI) DQGJ-STT3-CW0F-UQVR

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

UK entity/business name

Fisher Scientific UK

Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom

EU entity/business name Thermo Fisher Scientific Janssen Pharmaceuticalaan 3a

2440 Geel, Belgium

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

Tel: 01509 231166

Chemtrec US: (800) 424-9300 Chemtrec EU: 001-703-527-3887

Poison Centre - Emergency

information services

Ireland: National Poisons Information Centre (NPIC) -

01 809 2166 (8am-10pm, 7 days a week)

Malta: +356 2395 2000 Cyprus: +357 2240 5611

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

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

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Physical hazards

Substances/mixtures corrosive to metal Category 1 (H290)

Health hazards

Skin Corrosion/Irritation Category 1 B (H314)
Serious Eye Damage/Eye Irritation Category 1 (H318)

Environmental hazards

Acute aquatic toxicity

Chronic aquatic toxicity

Category 1 (H400)

Category 2 (H411)

Full text of Hazard Statements: see section 16

2.2. Label elements



Signal Word

Danger

Hazard Statements

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

H400 - Very toxic to aquatic life

H411 - Toxic to aquatic life with long lasting effects

EUH031 - Contact with acids liberates toxic gas

Precautionary Statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

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Component	CAS No	EC No	Weight %	GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Sodium hypochlorite	7681-52-9	231-668-3	> 5 - < 16	Met. Corr. 1 (H290) Skin Corr. 1B (H314) Eye Dam. 1 (H318) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) EUH031
Water	7732-18-5	231-791-2	> 84 - < 95	-

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Sodium hypochlorite	EUH031: C >=5%	10 (acute) 1 (chronic)	-

Note

Contains approx. 20ppm Potassium permanganate (KMnO4) CAS# 7722-64-7

Components	Reach Registration Number	
Sodium hypochlorite	01-2119488154-34	

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

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

Immediate medical attention is required.

Wash off immediately with plenty of water for at least 15 minutes. Remove and wash **Skin Contact**

contaminated clothing and gloves, including the inside, before re-use. Call a physician

immediately.

Do NOT induce vomiting. Clean mouth with water. Never give anything by mouth to an Ingestion

unconscious person. Call a physician immediately.

If not breathing, give artificial respiration. Remove from exposure, lie down. Do not use Inhalation

> mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory

medical device. Call a physician immediately.

Ensure that medical personnel are aware of the material(s) involved, take precautions to Self-Protection of the First Aider

protect themselves and prevent spread of contamination.

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

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

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

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Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

CO₂, dry chemical, dry sand, alcohol-resistant foam.

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. The product causes burns of eyes, skin and mucous membranes. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Chlorine, Oxygen.

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed 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. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

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Corrosives area. Protect from direct sunlight. Do not store in metal containers. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep at temperatures below 30°C.

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

Class 8B

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

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

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; SODÌUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE

	Component	Acute effects local (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Ī	Sodium hypochlorite			DNEL = 0.5% in mixture	
	7681-52-9 (> 5 - < 16)			(weight basis)	

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Sodium hypochlorite 7681-52-9 (> 5 - < 16)	DNEL = 3.1mg/m ³	DNEL = 3.1mg/m ³	DNEL = 1.55mg/m ³	DNEL = 1.55mg/m ³

Predicted No Effect Concentration (PNEC)

See values below. SODIUM HYPOCHLORITE SOLUTION, ... % CI ACTIVE.

Component	Fresh water	Fresh water sediment		Microorganisms in sewage treatment	, •
Sodium hypochlorite	PNEC = 0.21µg/L		PNEC = 0.26µg/L	PNEC = 4.69mg/L	
7681-52-9 (> 5 - < 16)					

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Sodium hypochlorite	PNEC = $0.042\mu g/L$			PNEC = 11.1mg/kg	
7681-52-9 (> 5 - < 16)				food	

8.2. Exposure controls

Engineering Measures

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Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Goggles (European standard - EN 166)

Hand Protection Protective gloves

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

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 When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used

and maintained properly

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:** Particulates filter conforming to EN 143

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure

limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water

system. Local authorities should be advised if significant spillages cannot be contained.

Liquid

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State Liquid

Appearance Pink

Odor pungent Chlorine
Odor Threshold No data available
Melting Point/Range -16 °C / 3.2 °F
Softening Point No data available
Boiling Point/Range No information available

Flammability (liquid) No data available Flammability (solid,gas) Not applicable

Explosion Limits No data available

Flash Point No information available Method - No information available

Autoignition TemperatureNo data availableDecomposition TemperatureNo data available

pH 11-13

Viscosity No data available

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Liquid

(Air = 1.0)

Water Solubility Soluble

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Vapor Pressure No data available Density / Specific Gravity 1.2 - 1.3

Bulk Density
Vapor Density
Not applicable
No data available

Particle characteristics Not applicable (liquid)

9.2. Other information

Molecular FormulaCl Na OMolecular Weight74.44

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Yes - Contact with acids liberates toxic gas

10.2. Chemical stability

Stable under normal conditions. Sensitivity to light.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

Acids. Strong oxidizing agents. Metals. Amines.

10.6. Hazardous decomposition products

Chlorine. Oxygen.

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
Sodium hypochlorite	LD50 = 8.91 g/kg (Rat)	LD50 > 20000 mg/kg (Rabbit)	> 10500 mg/l (Rat) 1h
Water	-	-	-

(b) skin corrosion/irritation; Category 1 B

Bridging principle "Dilution"

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Category 1 (c) serious eye damage/irritation;

Bridging principle "Dilution"

(d) respiratory or skin sensitization;

No data available Respiratory Skin No data available

Component	Test method	Test species	Study result
Sodium hypochlorite	OECD Test Guideline 406	guinea pig	non-sensitising
7681-52-9 (> 5 - < 16)			

No data available (e) germ cell mutagenicity;

No data available (f) carcinogenicity;

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

No data available (h) STOT-single exposure;

(i) STOT-repeated exposure; No data available

No information available. **Target Organs**

No data available (i) aspiration hazard;

delayed

Symptoms / effects,both acute and Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

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 The product contains following substances which are hazardous for the environment. Very

toxic to aquatic organisms.

	Component	Freshwater Fish	Water Flea	Freshwater Algae
Γ	Sodium hypochlorite	Clupea pallasi: LC50=0.065 mg/L	0.032 mg/L LC50 = 48 h	EC50: = 0.05 mg/L, 72h
		96h		(Pseudokirchnerella subcapitata)

Component	Microtox	M-Factor
Sodium hypochlorite	-	10 (acute)
		1 (chronic)

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12.2. Persistence and degradability

Persistence Soluble in water. Persistence is unlikely, based on information available. Miscible with

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 Bioaccumulation is unlikely

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

environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB

assessment

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent

and very bioaccumulative (vPvB).

12.6. Endocrine disrupting

properties

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects **Persistent Organic Pollutant**

This product does not contain any known or suspected substance **Ozone Depletion Potential** This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues/Unused

Products

Should not be released into the environment. Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in

accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

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

application specific.

Other Information Do not flush to sewer. Waste codes should be assigned by the user based on the

> application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN1791

14.2. UN proper shipping name HYPOCHLORITE SOLUTION

Technical Shipping Name Sodium hypochlrorite

14.3. Transport hazard class(es) 14.4. Packing group Ш

ADR

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14.1. UN number UN1791

14.2. UN proper shipping name HYPOCHLORITE SOLUTION

Technical Shipping Name Sodium hypochlrorite

14.3. Transport hazard class(es) 8
14.4. Packing group III

IATA

14.1. UN number UN1791

14.2. UN proper shipping name HYPOCHLORITE SOLUTION

Technical Shipping Name Sodium hypochlrorite

14.3. Transport hazard class(es) 8 14.4. Packing group 8

14.5. Environmental hazards Dangerous for the environment

Product is a marine pollutant according to the criteria set by IMDG/IMO

<u>14.6. Special precautions for user</u> 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

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
Sodium hypochlorite	7681-52-9	231-668-3	-	-	X	Х	KE-31506	Х	Х
Water	7732-18-5	231-791-2	-	-	Х	Х	KE-35400	Х	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Sodium hypochlorite	7681-52-9	X	ACTIVE	X	-	X	X	X
Water	7732-18-5	Х	ACTIVE	Х	-	Х	Х	Х

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

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Sodium hypochlorite	7681-52-9	-	Use restricted. See entry 75. (see link for restriction details)	-
Water	7732-18-5	-	-	-

REACH links

https://echa.europa.eu/substances-restricted-under-reach

Seveso III Directive (2012/18/EC)

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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 Repor Requirements	
Sodium hypochlorite	7681-52-9	Not applicable	Not applicable	
Water	7732-18-5	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

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 = 2 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Sodium hypochlorite	WGK2	

Component	France - INRS (Tables of occupational diseases)
Sodium hypochlorite	Tableaux des maladies professionnelles (TMP) - RG 65

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has been conducted by the manufacturer/importer 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

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H400 - Very toxic to aquatic life

H411 - Toxic to aquatic life with long lasting effects

EUH031 - Contact with acids liberates toxic gas

H335 - May cause respiratory irritation

H410 - Very toxic to aquatic life with long lasting effects

Legend

CAS - Chemical Abstracts Service

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

Inventory

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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TWA - Time Weighted Average

LD50 - Lethal Dose 50%

Transport Association

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

IARC - International Agency for Research on Cancer

ICAO/IATA - International Civil Aviation Organization/International Air

MARPOL - International Convention for the Prevention of Pollution from

Predicted No Effect Concentration (PNEC)

vPvB - very Persistent, very Bioaccumulative

EC50 - Effective Concentration 50% **POW** - Partition coefficient Octanol:Water

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PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances NZIOC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic

ADR - European Agreement Concerning the International Carriage of

Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime

Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

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 incident response training.

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Revision Summary SDS sections updated, 7.

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