

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

Creation Date 22-Sep-2009 Revision Date 27-Sep-2023 Revision Number 7

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

#### 1.1. Product identifier

Product Description: Cesium hydroxide, 50 wt% solution in water

Cat No.: 213600000; 213601000; 213605000
Synonyms Cesium Hydrate; Cesium Hydroxide Dimer.

Unique Formula Identifier (UFI) XKW1-X35S-6X09-Y7R2

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

Recommended Use Laboratory chemicals.

Sector of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Product category PC21 - Laboratory chemicals

**Process categories** PROC15 - Use as a laboratory reagent

**Environmental release category** ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

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

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

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

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

#### Cesium hydroxide, 50 wt% solution in water

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#### **Physical hazards**

Based on available data, the classification criteria are not met

#### **Health hazards**

Acute oral toxicity Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation Reproductive Toxicity Specific target organ toxicity - (repeated exposure) Category 4 (H302) Category 1 A (H314) Category 1 (H318) Category 2 (H361f) Category 2 (H373)

#### **Environmental hazards**

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

### 2.2. Label elements



Signal Word

Danger

#### **Hazard Statements**

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H361f - Suspected of damaging fertility

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

EUH071 - Corrosive to the respiratory tract

#### **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

This product does not contain any known or suspected endocrine disruptors

### **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.2. Mixtures

	Component	Component CAS No		Weight %	CLP Classification - According to
1					GB-CLP Regulations UK SI 2019/720 and

#### Cesium hydroxide, 50 wt% solution in water

				UK SI 2020/1567
Water	7732-18-5	231-791-2	50	-
Cesium hydroxide	21351-79-1	EEC No. 244-344-1	50	Acute Tox. 4 (H302) Skin Corr. 1A (H314) Eye Dam. 1 (H318) Repr. 2 (H361f) STOT RE 2 ( H373) EUH071

Components	Reach Registration Number	
Cesium hydroxide	01-2119979562-25	

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.

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

Immediate medical attention is required.

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

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

immediately.

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

unconscious person. Call a physician immediately.

**Inhalation** If not breathing, give artificial respiration. Call a physician immediately. Remove from

exposure, lie down. Do not use 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.

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

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

Notes to Physician Treat symptomatically.

### **SECTION 5: FIREFIGHTING MEASURES**

### 5.1. Extinguishing media

#### **Suitable Extinguishing Media**

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

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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.

#### **Hazardous Combustion Products**

Metal fumes and 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. 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

Should not be released into the environment.

#### 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

Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place.

Technical Rules for Hazardous Substances (TRGS) 510 Class 8B Storage Class (LGK) (Germany)

### 7.3. Specific end use(s)

Use in laboratories

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### **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### 8.1. Control parameters

#### **Exposure limits**

List source(s): UK - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. IRE - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Cesium hydroxide	STEL: 6 mg/m <sup>3</sup> 15 min		TWA: 2 mg/m <sup>3</sup> 8 hr.
	TWA: 2 mg/m <sup>3</sup> 8 hr		respirable dust
	_		STEL: 6 mg/m <sup>3</sup> 15 min

#### **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 (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
Cesium hydroxide 21351-79-1 ( 50 )				DNEL = 3.72mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Cesium hydroxide 21351-79-1 ( 50 )	DNEL = 1mg/m <sup>3</sup>		DNEL = 1mg/m <sup>3</sup>	DNEL = 1.31mg/m <sup>3</sup>

#### **Predicted No Effect Concentration (PNEC)**

See values below.

Component	Fresh water	Fresh water	Water Intermittent	Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Cesium hydroxide	PNEC = 1.12mg/L	PNEC = 4.37mg/kg	PNEC = 0.843mg/L	PNEC = 89.3mg/L	PNEC = 0.22mg/kg
21351-79-1 ( 50 )	_	sediment dw	_		soil dw

Componen	t	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Cesium hydrox	ide PN	IEC = 0.112mg/L	PNEC =			
21351-79-1 (	50)		0.437mg/kg			
			sediment dw			

### 8.2. Exposure controls

#### **Engineering Measures**

Ensure adequate ventilation, especially in confined areas. 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

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

#### Cesium hydroxide, 50 wt% solution in water

Hand Protection Protective gloves

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

**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

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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: Inorganic gases and vapours filter Type B Grey or Ammonia

Liquid

and organic ammonia derivatives filter Type K Green conforming to EN14387

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:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN

141; Particle filtering: EN149:2001

When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls** No information available.

### **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

#### 9.1. Information on basic physical and chemical properties

Physical State Liquid

Appearance Colorless Odor Odorless

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

Flammability (solid,gas)

Not applicable

Explosion Limits No data available

Flash Point No information available Method - No information available

Autoignition Temperature No data available
Decomposition Temperature No data available

pH No information available 14

Viscosity No data available

Water Solubility Soluble

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

#### Cesium hydroxide, 50 wt% solution in water

N. 1. 211

Vapor Pressure No data available

Density / Specific Gravity 1.74

Bulk DensityNot applicableLiquidVapor Density5.16(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 Polymerization Hazardous Reactions**No information available.
None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

Acids. Metals.

10.6. Hazardous decomposition products

Metal fumes and oxides.

### **SECTION 11: TOXICOLOGICAL INFORMATION**

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

#### **Product Information**

(a) acute toxicity;

Oral Category 4

DermalBased 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	-	-	-
Cesium hydroxide	1026 mg/kg (Rat)	-	-

(b) skin corrosion/irritation; Category 1 A

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

**Respiratory** No data available

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Skin No data available

(e) germ cell mutagenicity; No data available

Not mutagenic in AMES Test

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; Category 2

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

(h) STOT-single exposure; No data available

Category 2 (i) STOT-repeated exposure;

**Target Organs** None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

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

Contains no substances known to be hazardous to the environment or that are not **Ecotoxicity effects** 

degradable in waste water treatment plants.

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential Bioaccumulation is unlikely

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

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

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** 

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.

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

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

application specific.

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

was used. Do not empty into drains. Do not flush to sewer. Large amounts will affect pH and harm aquatic organisms. Solutions with high pH-value must be neutralized before

discharge.

### **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

14.1. UN number UN2681

CAESIUM HYDROXIDE SOLUTION 14.2. UN proper shipping name

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

ADR

14.1. UN number 2681

14.2. UN proper shipping name CAESIUM HYDROXIDE SOLUTION

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

IATA

14.1. UN number UN2681

14.2. UN proper shipping name CAESIUM HYDROXIDE SOLUTION

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

No hazards identified 14.5. Environmental hazards

14.6. Special precautions for user No special precautions required.

14.7. Maritime transport in bulk Not applicable, packaged goods according to IMO instruments

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### **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
Water	7732-18-5	231-791-2	-	-	Х	X	KE-35400	X	-
Cesium hydroxide	21351-79-1	244-344-1	-	-	Х	X	KE-05440	X	Х

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Water	7732-18-5	Х	ACTIVE	X	-	X	Х	Х
Cesium hydroxide	21351-79-1	Х	ACTIVE	X	-	X	-	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

Not applicable

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)
Water	7732-18-5	-	-	-
Cesium hydroxide	21351-79-1	-	-	-

### 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
Ī	Cesium hydroxide	21351-79-1	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 .

Take note of Directive 94/33/EC on the protection of young people at work

Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women 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 = 3 (self classification)

Component Germany - Water Classification (AwSV) Germany - TA-Luft Class
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#### Cesium hydroxide, 50 wt% solution in water

Cesium hydroxide WGK2

#### 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

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eve damage

H361f - Suspected of damaging fertility

EUH071 - Corrosive to the respiratory tract

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

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

Substances List

**ENCS** - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of 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

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

POW - Partition coefficient Octanol:Water

vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of

Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime

Dangerous Goods Code

Ships

ICAO/IATA - International Civil Aviation Organization/International Air **Transport Association** 

MARPOL - International Convention for the Prevention of Pollution from

**OECD** - Organisation for Economic Co-operation and Development ATE - Acute Toxicity Estimate

**BCF** - Bioconcentration factor VOC - (Volatile Organic Compound)

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

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

#### Cesium hydroxide, 50 wt% solution in water

First aid for chemical exposure, including the use of eye wash and safety showers. Chemical incident response training.

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**Revision Summary** SDS sections updated.

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**

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