

# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: US OSHA HCS 2024 and Canada Hazardous Products Act (HPA) and Hazardous Products Regulation (HPR), as amended

Issuing Date 15-Aug-2025 Revision date 15-Aug-2025 Revision Number 1

## 1. Identification

**Product identifier** 

Product Name Vertiv Liebert PSI5 Lithium-Ion Series, Vertiv Edge Lithium-Ion Series

Other means of identification

Product Code(s) Lithium Batteries

UN number or ID number UN3480

Synonyms Li Batteries

Recommended use of the chemical and restrictions on use

Recommended use Uninterruptible Power Supply (UPS)

Restrictions on use None

Details of the supplier of the safety data sheet

#### **Manufacturer Address**

Vertiv Group Corporation 505 N Cleveland Ave Westerville, OH 43082

Emergency telephone number

Emergency telephone 1-614-888-0246

## 2. Hazard(s) identification

## Classification of the substance or mixture

As supplied, this product is an article. This product contains a battery. No exposure to hazardous chemicals is expected to occur during intended product use. Misuse of the product may result in exposure to hazardous chemicals. The information below relates to the mixture of components contained within the battery.

This product is not considered hazardous by either the US OSHA Hazard Communication Standard 2024, or Canada Hazardous Products Act (HPA) and Hazardous Products Regulation (HPR), as amended.

#### Label elements

#### **Hazard statements**

Not classified.

#### Hazards classified under paragraph (d)(1)(ii) of 1910.1200

No information available.

#### Other information

May be harmful in contact with skin. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

## 3. Composition/information on ingredients

#### Substance

Not applicable.

<u>Mixture</u>

Synonyms Li Batteries

Chemical name	CAS No.	Weight-%	Information Review	Date HMIRA filed and date exemption granted (if applicable)
Graphite	7782-42-5	10-15	-	-
Copper	7440-50-8	7-13	-	-
Aluminum	7429-90-5	5-10	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1-5	-	-
Carbon Black	1333-86-4	1-3	-	-

## 4. First-aid measures

#### **Description of first aid measures**

**Inhalation** If contents are released: Remove to fresh air.

**Eye contact** If contents are released: Rinse thoroughly with plenty of water, also under the eyelids.

**Skin contact** If contents are released: Wash with plenty of water.

**Ingestion** If contents are released: Rinse mouth. Get medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms None known.

Effects of Exposure None known.

Indication of any immediate medical attention and special treatment needed

**Note to physicians** Treat symptomatically.

# 5. Fire-fighting measures

surrounding environment.

Unsuitable extinguishing media No information available.

Specific hazards arising from the No inform

chemical

No information available.

Hazardous combustion products Carbon monoxide, Carbon dioxide (CO2), Lithium oxides.

**Explosion data** 

Sensitivity to mechanical impact None. Sensitivity to static discharge None.

Special protective equipment and precautions for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

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Use personal protection equipment.

## 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dispose of wastes in an approved waste disposal facility.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and after

work.

Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep in a dry, cool and well-ventilated place.

## 8. Exposure controls/personal protection

#### **Control Parameters**

#### **Exposure Limits**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
Graphite 7782-42-5	TWA: 2 mg/m³ respirable particulate matter all forms	TWA: 15 mg/m³ total dust synthetic	TWA: 2.5 mg/m³; natural respirable dust
	except graphite fibers	TWA: 5 mg/m³ respirable fraction synthetic TWA: 15 mppcf respirable dust	IDLH: 1250 mg/m <sup>3</sup>
		natural	
Copper	TWA: 0.2 mg/m³ fume	TWA: 0.1 mg/m³ fume	TWA: 1 mg/m <sup>3</sup> ; dust and mist
7440-50-8		TWA: 1 mg/m <sup>3</sup> dust and mist	
		(vacated) TWA: 0.1 mg/m³ Cu	IDLH: 100 mg/m <sup>3</sup> dust, fume
		dust, fume, mist	and mist
Aluminum	TWA: 1 mg/m³ respirable	TWA: 15 mg/m³ total dust	TWA: 10 mg/m³; total dust
7429-90-5	particulate matter	TWA: 5 mg/m³ respirable	TWA: 5 mg/m <sup>3</sup> ; respirable dust
		fraction	
		(vacated) TWA: 15 mg/m³ total	
		dust	
		(vacated) TWA: 5 mg/m <sup>3</sup>	

			respirab	le fraction		
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m <sup>3</sup>	F		5 mg/m³ F VA: 2.5 mg/m³	II	DLH: 250 mg/m <sup>3</sup> F
Carbon Black 1333-86-4	TWA: 3 mg/m³ inha particulate matte			.5 mg/m³ VA: 3.5 mg/m³	TWA: ( in p aroma	TWA: 3.5 mg/m³; 0.1 mg/m³; Carbon black resence of Polycyclic atic hydrocarbons PAH DLH: 1750 mg/m³
Chemical name	Alberta	Britis	h Columbia	Ontario		Quebec
Graphite	TWA: 2 mg/m <sup>3</sup> ;	TWA	A: 2 mg/m³;	TWA: 2 mg/	m³;	TWAEV: 2 mg/m <sup>3</sup> ;
7782-42-5	respirable	re	espirable	respirable parti	culate	respirable dust
			·	matter		-
Copper	TWA: 0.2 mg/m <sup>3</sup> ; fume	TWA: 1 r	mg/m³; dust and	TWA: 0.2 mg/m	3; fume	TWAEV: 0.2 mg/m <sup>3</sup> ;
7440-50-8	TWA: 1 mg/m <sup>3</sup> ; dust		mist	TWA: 1 mg/m <sup>3</sup> ; c	lust and	fume
	and mist	TWA: 0.	.2 mg/m³; fume	mist		TWAEV: 1 mg/m <sup>3</sup> ; dust
						and mist
Aluminum	TWA: 10 mg/m <sup>3</sup> ; dust	TWA	: 1.0 mg/m <sup>3</sup> ;	TWA: 1 mg/	m³;	TWAEV: 5 mg/m <sup>3</sup> ;
7429-90-5		re	espirable	respirable parti	culate	-
				matter		
Phosphate(1-), hexafluoro-,	TWA: 2.5 mg/m <sup>3</sup> ;	TWA	: 2.5 mg/m <sup>3</sup> ;	TWA: 2.5 mg	/m³;	TWAEV: 2.5 mg/m <sup>3</sup> ;
lithium						
21324-40-3						
Carbon Black	TWA: 3.5 mg/m <sup>3</sup> ;	TWA: 3 r	ng/m³; inhalable	TWA: 3 mg/m <sup>3</sup> ; ir	nhalable	TWAEV: 3 mg/m <sup>3</sup> ;
1333-86-4				particulate ma	atter	inhalable dust

Chemical name	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
Graphite	TWA: 2 mg/m³; respirable particulate matter	TWA: 2 mg/m <sup>3</sup> ; respirable fraction	TWA: 2 mg/m <sup>3</sup> ; respirable particulate matter	TWA: 2 mg/m <sup>3</sup> ; respirable particulate matter
Copper	TWA: 0.2 mg/m <sup>3</sup> ; fume	TWA: 0.2 mg/m <sup>3</sup> ; fume	TWA: 0.2 mg/m <sup>3</sup> ; fume	TWA: 0.2 mg/m <sup>3</sup> ; fume
Aluminum	TWA: 1 mg/m³; respirable particulate matter	TWA: 1 mg/m³; respirable fraction	TWA: 1 mg/m³; respirable particulate matter	TWA: 1 mg/m³; respirable particulate matter
Carbon Black	TWA: 3 mg/m³; inhalable particulate matter	TWA: 3 mg/m³; inhalable fraction	TWA: 3 mg/m³; inhalable particulate matter	TWA: 3 mg/m³; inhalable particulate matter

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Graphite	TWA: 2 mg/m <sup>3</sup> ;	TWA: 2 mg/m <sup>3</sup> ;	TWA: 2 mg/m <sup>3</sup> ;	TWA: 20 mppcf;
	respirable fraction	respirable particulate	respirable fraction	TWA: 30 mppcf;
	STEL: 4 mg/m <sup>3</sup> ;	matter	STEL: 4 mg/m <sup>3</sup> ;	TWA: 10 mg/m <sup>3</sup> ;
	respirable fraction		respirable fraction	-
Copper	TWA: 0.2 mg/m <sup>3</sup> ; fume	TWA: 0.2 mg/m <sup>3</sup> ; fume		
	TWA: 1 mg/m <sup>3</sup> ; dust and		TWA: 1 mg/m <sup>3</sup> ; dust and	TWA: 1 mg/m <sup>3</sup> ; dust and
	mist		mist	mist
	STEL: 3 mg/m <sup>3</sup> ; dust			STEL: 0.2 mg/m <sup>3</sup> ; fume
	and mist		STEL: 3 mg/m <sup>3</sup> ; dust	STEL: 2 mg/m³; dust
	STEL: 0.6 mg/m <sup>3</sup> ; fume		and mist	and mist
Aluminum	TWA: 10 mg/m <sup>3</sup> ; dust	TWA: 1 mg/m <sup>3</sup> ;	TWA: 10 mg/m <sup>3</sup> ; dust	-
	STEL: 20 mg/m³; dust	respirable particulate	STEL: 20 mg/m³; dust	
		matter		
Carbon Black	TWA: 3.5 mg/m <sup>3</sup> ;	TWA: 3 mg/m <sup>3</sup> ;	TWA: 3.5 mg/m <sup>3</sup> ;	TWA: 3.5 mg/m <sup>3</sup> ;
	STEL: 7 mg/m <sup>3</sup> ;	inhalable particulate	STEL: 7 mg/m <sup>3</sup> ;	STEL: 7 mg/m <sup>3</sup> ;
		matter		

**Note** See section 16 for terms and abbreviations.

Other information on limit values Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962

(11th Cir., 1992).

#### Biological occupational exposure limits

Chemical name	ACGIH
Phosphate(1-), hexafluoro-, lithium	2 mg/L - urine (Fluoride) - prior to shift
21324-40-3	3 mg/L - urine (Fluoride) - end of shift

#### Appropriate engineering controls

Engineering controls Showers

Eyewash stations Ventilation systems.

#### Individual protection measures, such as personal protective equipment

**Eye/face protection** No special protective equipment required.

**Hand protection** No special protective equipment required.

**Skin and body protection**No special protective equipment required.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are

exceeded or irritation is experienced, ventilation and evacuation may be required.

## 9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance Solid containing liquid

Physical state Solid Color Varies

Odor (includes odor threshold) No information available

<u>Property</u> <u>Values</u> <u>Remarks • Method</u>

Melting point / freezing pointNo data availableBoiling point (or initial boiling point orNo data available

boiling range)

Flammability No data available

Flammability Limit in Air

Upper flammability or explosive limitsNo data availableLower flammability or explosive limitsNo data available

Flash point No data available
Autoignition temperature No data available
Decomposition temperature No data available

SADT (°C)

PH

PH (as aqueous solution)

No data available

Solubility
Water solubility
No data available
No data available

Partition coefficient n-octanol/water (log

No data available

value)

Vapor pressure (includes evaporation rate)No data availableEvaporation rateNo data available

Density and/or relative densityNo data availableBulk densityNo data availableLiquid DensityNo data availableRelative vapor densityNo data available

Relative vapor density Particle characteristics

Particle SizeNo data availableParticle Size DistributionNo data available

Other information

Molecular weight No information available

VOC content 0.0%

Softening point No information available

Information with regard to physical hazard classes

**Explosives** 

Explosive properties No information available Oxidizing properties No information available

# 10. Stability and reactivity

**Reactivity** None under normal use conditions.

**Chemical stability** Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid None known based on information supplied.

Incompatible materials None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

## 11. Toxicological information

## Information on likely routes of exposure

Product Information .

**Inhalation** Specific test data for the substance or mixture is not available.

**Eye contact** Specific test data for the substance or mixture is not available.

**Skin contact** When used as directed and under normal conditions, no exposure to hazardous

components is expected. If contents are released: May be harmful in contact with skin.

**Ingestion** Specific test data for the substance or mixture is not available.

## Symptoms related to the physical, chemical and toxicological characteristics

Symptoms None known.

Acute toxicity No information available.

Numerical measures of toxicity

The following ATE values have been calculated for the mixture:
ATEmix (oral) 130,702.00 mg/kg
ATEmix (dermal) 2,693.00 mg/kg

## **Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Graphite	-	-	> 2000 mg/m <sup>3</sup> (Rat) 4 h
Copper	-	•	> 5.11 mg/L (Rat) 4 h
Aluminum	-	-	> 0.888 mg/L (Rat) 4 h
Carbon Black	> 10000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 4.6 mg/m <sup>3</sup> (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation**No information available.

Serious eye damage/eye irritation No information available.

**Respiratory or skin sensitization** No information available.

Germ cell mutagenicity No information available.

Carcinogenicity Based on available data, the classification criteria are not met.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Aluminum	A4 - Not classifiable as	-	-	-
7429-90-5	a human carcinogen			
Phosphate(1-), hexafluoro-,	A4 - Not classifiable as	-	-	-
lithium	a human carcinogen			
21324-40-3				
Carbon Black	A3 - Confirmed animal	Group 2B - Possibly	-	Present
1333-86-4	carcinogen (with	carcinogenic to humans		
	unknown relevance to			
	humans)			

Reproductive toxicity No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

# 12. Ecological information

**Ecotoxicity** 

Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to	Crustacea
			microorganisms	
Graphite	-	LC50: >100mg/L (96h,	-	-
7782-42-5		Danio rerio)		
Copper	EC50: 0.0426 -	LC50: 0.0068 -	-	EC50: =0.03mg/L (48h,
7440-50-8	0.0535mg/L (72h,	0.0156mg/L (96h,		Daphnia magna)
	Pseudokirchneriella	Pimephales promelas)		
	subcapitata)	LC50: <0.3mg/L (96h,		
	EC50: 0.031 -	Pimephales promelas)		
	0.054mg/L (96h,	LC50: =0.2mg/L (96h,		

Pseudokirchneriella	Pimephales promelas)	
subcapitata)	LC50: =0.052mg/L (96h,	
	Oncorhynchus mykiss)	
	LC50: =1.25mg/L (96h,	
	Lepomis macrochirus)	
	LC50: =0.3mg/L (96h,	
	Cyprinus carpio)	
	LC50: =0.8mg/L (96h,	
	Cyprinus carpio)	
	LC50: =0.112mg/L (96h,	
	Poecilia reticulata)	

Persistence and degradability No information available.

**Bioaccumulation** No information available.

Other adverse effects No information available.

# 13. Disposal considerations

**Disposal methods** 

Waste from residues/unused

products

Dispose of in accordance with local regulations, Dispose of waste in accordance with

environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

California waste information This product contains one or more substances that are listed with the State of California as

a hazardous waste.

## 14. Transport information

DOT

UN number or ID number UN3480

Proper shipping name Lithium ion batteries

Transport hazard class(es)

Reportable quantity (lbs) Copper: RQ (lb)= 5000.00 Reportable quantity (lbs) Copper: RQ (lb)= 45208.00

(calculated)

Reportable quantity (kg) (Copper: RQ (kg)= 2270.00) Reportable quantity (kg) Copper: RQ (kg)= 20524.41

(calculated)

**Special Provisions** 388, 422, A54, A100

**DOT Marine Pollutant** PP **Marine pollutant** Copper

**Description** UN3480, Lithium ion batteries, 9

**Emergency Response Guide** 147

Number

TDG

UN number or ID number UN3480

Proper shipping name Lithium ion batteries

Transport hazard class(es) 9

**Description** UN3480, Lithium ion batteries, 9

Forbidden for transport by Passenger Air.

Notes Forbidden for transport by Passenger Air.

**UN number or ID number** UN3480

UN proper shipping name Lithium ion batteries

Transport hazard class(es) 9
Environmental hazards 9
Yes

**Special Provisions** A88, A99, A154, A183, A201, A213, A331, A334, A802

ERG Code 12FZ

**Description** UN3480, Lithium ion batteries, 9

**IMDG** 

UN number or ID number UN3480

**UN proper shipping name** Lithium ion batteries

Transport hazard class(es) 9
Marine pollutant indicator P

**Special Provisions** 188, 230,310, 348, 376, 377, 384, 387

**EmS-No.** F-A, S-I

**Description** UN3480, Lithium ion batteries, 9, Marine pollutant

## 15. Regulatory information

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

**International Regulations** 

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

#### **International Inventories**

Contact supplier for inventory compliance status

#### **US Federal Regulations**

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
Copper - 7440-50-8	1.0
Aluminum - 7429-90-5	1.0

## SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

## **CWA (Clean Water Act)**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous
	Quantities			Substances

Copper	-	X	X	-
7440-50-8				

## CAA (Clean Air Act)

This product does not contain any substances regulated as pollutants pursuant to Clean Air Act (CAA).

## **CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Copper	5000 lb / 2270 kg (final RQ)	-
7440-50-8		

## **US State Regulations**

## **California Proposition 65**

This product contains the following Proposition 65 chemicals:.

Chemical name	California Proposition 65
Carbon Black - 1333-86-4	Carcinogen

#### **U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Graphite 7782-42-5	X	X	X
Copper 7440-50-8	X	X	X
Aluminum 7429-90-5	X	X	X
Dimethyl carbonate 616-38-6	X	X	X
Ethylene carbonate 96-49-1	-	X	Х
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X	-	<u>-</u>
Carbon Black 1333-86-4	Х	X	X

#### U.S. EPA Label Information

16. Other information

## EPA Pesticide Registration Number Not applicable

NFPA	Health hazards 0	Elammability 0	Instability ∩	Special hazards -	
NTFA	neallii iiazai us 🗸	Flammability 0	IIIStability U	Special Hazarus -	

HMIS Health hazards 0 Flammability 0 Physical hazards 0 Personal protection X

# Key or legend to abbreviations and acronyms used in the safety data sheet

Legena	
ACGIH	American Conference of Governmental Industrial Hygienists
ADN	Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Europe)
ADR	Agreement concerning the International Carriage of Dangerous Goods by Road (Europe)
AIIC	Australian Inventory of Industrial Chemicals

ATE	Acute Toxicity Estimate		
ASTM	American Society for the Testing of Materials		
bar	Biological Reference Values for Chemical Compounds in the Work Area		
BAT	Biological tolerance values for occupational exposure		
BEL	Biological exposure limits		
bw	Body weight		
Ceiling	Maximum limit value		
CMR	Carcinogen, Mutagen or Reproductive Toxicant		
DOT	Department of Transportation (United States)		
DSL	Domestic Substances List (Canada)		
EmS	Emergency Schedule		
ENCS	Existing and New Chemical Substances (Japan)		
EPA	U.S. Environmental Protection Agency		
GHS	Globally Harmonized System		
HMIS	Hazardous Materials Identification System		
IARC	International Agency for Research on Cancer		
IATA	International Air Transport Association		
IBC	International Code for the Construction and Equipment of Ships carrying Dangerous		
	Chemicals in Bulk		
ICAO	International Civil Aviation Organization		
IECSC	Inventory of Existing Chemical Substances in China		
IMDG	International Maritime Dangerous Goods		
IMO	International Maritime Dangerous Goods  International Maritime Organization		
ISO	International Organization for Standardization		
KECI	Korean Existing Chemicals Inventory		
LC50	Lethal Concentration to 50% of a test population		
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)		
MARPOL	International Convention for the Prevention of Pollution from Ships		
NFPA	National Fire Protection Association		
NIOSH	National Institute for Occupational Safety and Health		
n.o.s.	Not Otherwise Specified		
NOAEC	No Observed Adverse Effect Concentration		
NOAEL	No Observed Adverse Effect Level		
NOELR	No Observable Effect Loading Rate		
NTP	National Toxicology Program (United States)		
NZIoC	New Zealand Inventory of Chemicals		
OECD	Organization for Economic Cooperation and Development		
OEL	Occupational exposure limits		
OSHA	Occupational Safety and Health Administration of the US Department of Labor		
PBT	Persistent, Bioaccumulative and Toxic substance		
PICCS	Philippines Inventory of Chemicals and Chemical Substances		
PMT	Persistent, Mobile and Toxic		
PPE	Personal protective equipment		
QSAR	Quantitative Structure Activity Relationship		
RID	Agreement concerning the International Carriage of Dangerous Goods by Rail (Europe)		
SADT	Self-Accelerating Decomposition Temperature		
SAR	Structure-activity relationship		
SARA	Superfund Amendments and Reauthorization Act		
SDS	Safety Data Sheet		
SL	Surface Limit		
STEL	Short Term Exposure Limit		
STOT RE	Specific target organ toxicity - Repeated exposure		
STOT SE	Specific target organ toxicity - Nepeated exposure		
TCSI	Taiwan Chemical Substance Inventory		
TDG	Transport of Dangerous Goods (Canada)		
פטוו	Transport of Dangerous Goods (Canada)		

TSCA	Toxic Substances Control Act (United States)
TWA	Time-Weighted Average
UN	United Nations
VOC	Volatile organic compounds
vPvB	Very Persistent and Very Bioaccumulative
vPvM	Very Persistent and Very Mobile
As	Allergenic substance
DS	Dermal Sensitizer
Ot	Ototoxicant
pOt	Ototoxicant - potential to cause hearing disorders
PS	Photosensitizer
RS	Respiratory Sensitizer
S	Sensitizer
poS	Sensitizer - capable of causing occupational asthma
Sa	Simple asphyxiant
Sd	Skin designation
pSd	Skin designation - potential for cutaneous absorption
Sdv	Skin designation - vacated
Sk	Skin notation
dSk	Skin notation - danger of cutaneous absorption
pSk	Skin notation - potential for cutaneous absorption

## Key literature references and sources for data used to compile the SDS

U.S. Environmental Protection Agency ChemView Database

European Food Safety Authority (EFSA)

U.S. Environmental Protection Agency

Acute Exposure Guideline Level(s) (AEGL(s))

U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal

Hazardous Substance Database

International Uniform Chemical Information Database (IUCLID)

Japan GHS Classification

Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)

U.S. National Toxicology Program (NTP)

New Zealand's Chemical Classification and Information Database (CCID)

International Organization for Economic Co-operation and Development (OECD) Environment, Health, and Safety Publications International Organization for Economic Co-operation and Development (OECD) High Production Volume Chemicals Program International Organization for Economic Co-operation and Development (OECD) Screening Information Data Set United Nations World Health Organization (WHO)

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Revision Note Initial Release.

**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**