



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 24-Feb-2026

Revision date 24-Feb-2026

Revision Number 1

1. Identification

Product identifier

Product Name PowerUPS 100 Lithium UPS

Other means of identification

Product Code(s) PowerUPS 100 Lithium Series

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.

Skin sensitization	Category 1
Carcinogenicity	Category 1B

Label elements



Danger

Hazard statements

May cause an allergic skin reaction.

May cause cancer.

Precautionary Statements - Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Avoid breathing dust, fume, gas, mist, vapors and spray.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see supplemental first aid instructions on this label).

Skin

IF ON SKIN: Wash with plenty of water and soap.

If skin irritation or rash occurs: Get medical advice and attention.

Take off contaminated clothing and wash it before reuse.

Precautionary Statements - Storage

Store locked up.

Precautionary Statements - Disposal

Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable.

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.

Mixture**Synonyms**

Li Batteries

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Graphite	7782-42-5	10-20	-	-
Copper	7440-50-8	7-13	-	-
Aluminum	7429-90-5	1-5	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1-5	-	-
Carbon black	1333-86-4	0.1-1	-	-
Nickel	7440-02-0	0.1-1	-	-

4. First-aid measures**Description of first aid measures****General advice**

Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get

	medical advice/attention.
Inhalation	If contents are released:
Eye contact	If contents are released:
Skin contact	Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician. If contents are released:
Ingestion	If contents are released:

Most important symptoms and effects, both acute and delayed

Symptoms	Itching. Rashes. Hives.
Effects of Exposure	May cause cancer.

Indication of any immediate medical attention and special treatment needed

Note to physicians	May cause sensitization in susceptible persons. Treat symptomatically.
--------------------	--

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	No information available.
Specific hazards arising from the chemical	Product is or contains a sensitizer. May cause sensitization by skin contact.
Hazardous combustion products	Carbon monoxide, Carbon dioxide (CO ₂), 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. Use personal protective equipment.

6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
Other information	Refer to protective measures listed in Sections 7 and 8.

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. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

General hygiene considerations

Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

Conditions for safe storage, including any incompatibilities**Storage Conditions**

Keep containers tightly closed 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/m ³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m ³ total dust synthetic TWA: 5 mg/m ³ respirable fraction synthetic TWA: 15 mppcf respirable dust natural	TWA: 2.5 mg/m ³ ; natural respirable dust IDLH: 1250 mg/m ³
Copper 7440-50-8	TWA: 0.2 mg/m ³ fume	TWA: 0.1 mg/m ³ fume TWA: 1 mg/m ³ dust and mist (vacated) TWA: 0.1 mg/m ³ Cu dust, fume, mist	TWA: 1 mg/m ³ ; dust and mist TWA: 0.1 mg/m ³ ; fume IDLH: 100 mg/m ³ dust, fume and mist
Aluminum 7429-90-5	TWA: 1 mg/m ³ respirable particulate matter	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ ; total dust TWA: 5 mg/m ³ ; respirable dust
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F (vacated) TWA: 2.5 mg/m ³	IDLH: 250 mg/m ³ F
Carbon black 1333-86-4	TWA: 3 mg/m ³ inhalable particulate matter	TWA: 3.5 mg/m ³ (vacated) TWA: 3.5 mg/m ³	TWA: 3.5 mg/m ³ ; TWA: 0.1 mg/m ³ ; Carbon black in presence of Polycyclic aromatic hydrocarbons PAH IDLH: 1750 mg/m ³
Nickel 7440-02-0	TWA: 1.5 mg/m ³ inhalable particulate matter	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³	TWA: 0.015 mg/m ³ ; IDLH: 10 mg/m ³

Chemical name	Alberta	British Columbia	Ontario	Quebec
Graphite 7782-42-5	TWA: 2 mg/m ³ ; respirable	TWA: 2 mg/m ³ ; respirable	TWA: 2 mg/m ³ ; respirable particulate matter	TWAEV: 2 mg/m ³ ; respirable dust
Copper 7440-50-8	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist	TWA: 1 mg/m ³ ; dust and mist TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist	TWAEV: 0.2 mg/m ³ ; fume TWAEV: 1 mg/m ³ ; dust and mist

Aluminum 7429-90-5	TWA: 10 mg/m ³ ; dust	TWA: 1.0 mg/m ³ ; respirable	TWA: 1 mg/m ³ ; respirable particulate matter	TWAEV: 5 mg/m ³ ;
Phosphate(1-), hexafluoro-, lithium 21324-40-3	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWA: 2.5 mg/m ³ ;	TWAEV: 2.5 mg/m ³ ;
Carbon black 1333-86-4	TWA: 3.5 mg/m ³ ;	TWA: 3 mg/m ³ ; inhalable	TWA: 3 mg/m ³ ; inhalable particulate matter	TWAEV: 3 mg/m ³ ; inhalable dust
Nickel 7440-02-0	TWA: 1.5 mg/m ³ ;	TWA: 0.05 mg/m ³ ;	TWA: 1 mg/m ³ ; inhalable fraction	TWAEV: 1.5 mg/m ³ ; inhalable dust

Chemical name	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
Graphite 7782-42-5	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable fraction	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable particulate matter
Copper 7440-50-8	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume
Aluminum 7429-90-5	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 1 mg/m ³ ; respirable fraction	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 1 mg/m ³ ; respirable particulate matter
Carbon black 1333-86-4	TWA: 3 mg/m ³ ; inhalable particulate matter	TWA: 3 mg/m ³ ; inhalable fraction	TWA: 3 mg/m ³ ; inhalable particulate matter	TWA: 3 mg/m ³ ; inhalable particulate matter
Nickel 7440-02-0	TWA: 1.5 mg/m ³ ; inhalable particulate matter	TWA: 1.5 mg/m ³ ; inhalable fraction	TWA: 1.5 mg/m ³ ; inhalable particulate matter	TWA: 1.5 mg/m ³ ; inhalable particulate matter

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
Graphite 7782-42-5	TWA: 2 mg/m ³ ; respirable fraction STEL: 4 mg/m ³ ; respirable fraction	TWA: 2 mg/m ³ ; respirable particulate matter	TWA: 2 mg/m ³ ; respirable fraction STEL: 4 mg/m ³ ; respirable fraction	TWA: 20 mppcf; TWA: 30 mppcf; TWA: 10 mg/m ³ ;
Copper 7440-50-8	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 3 mg/m ³ ; dust and mist STEL: 0.6 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 0.6 mg/m ³ ; fume STEL: 3 mg/m ³ ; dust and mist	TWA: 0.2 mg/m ³ ; fume TWA: 1 mg/m ³ ; dust and mist STEL: 0.2 mg/m ³ ; fume STEL: 2 mg/m ³ ; dust and mist
Aluminum 7429-90-5	TWA: 10 mg/m ³ ; dust STEL: 20 mg/m ³ ; dust	TWA: 1 mg/m ³ ; respirable particulate matter	TWA: 10 mg/m ³ ; dust STEL: 20 mg/m ³ ; dust	-
Carbon black 1333-86-4	TWA: 3.5 mg/m ³ ; STEL: 7 mg/m ³ ;	TWA: 3 mg/m ³ ; inhalable particulate matter	TWA: 3.5 mg/m ³ ; STEL: 7 mg/m ³ ;	TWA: 3.5 mg/m ³ ; STEL: 7 mg/m ³ ;
Nickel 7440-02-0	TWA: 1.5 mg/m ³ ; inhalable fraction STEL: 3 mg/m ³ ; inhalable fraction Designated substance	TWA: 1.5 mg/m ³ ; inhalable particulate matter	TWA: 1.5 mg/m ³ ; inhalable fraction STEL: 3 mg/m ³ ; inhalable fraction Designated Chemical Substance	TWA: 1 mg/m ³ ; STEL: 3 mg/m ³ ;

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 21324-40-3	2 mg/L - urine (Fluoride) - prior to shift 3 mg/L - urine (Fluoride) - end of shift
Nickel 7440-02-0	5 µg/L - urine (Nickel) - post-shift at end of workweek

Appropriate engineering controls

Engineering controls Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear suitable gloves.

Skin and body protection Wear suitable protective clothing.

Respiratory protection Use appropriate respiratory protection. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material.

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

Property	Values	Remarks • Method
Melting point / freezing point		No data available
Boiling point (or initial boiling point or boiling range)		No data available
Flammability		No data available
Flammability Limit in Air		
Upper flammability or explosive limits		No data available
Lower flammability or explosive limits		No data available
Flash point		No data available
Autoignition temperature		No data available
Decomposition temperature		No data available
SADT (°C)		No data available
pH		No data available
pH (as aqueous solution)		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available
Solubility		No data available
Water solubility		No data available
Partition coefficient n-octanol/water (log value)		No data available
Vapor pressure (includes evaporation rate)		No data available
Evaporation rate		No data available
Density and/or relative density		No data available
Bulk density		No data available
Liquid Density		No data available
Relative vapor density		No data available
Particle characteristics		
Particle Size		No data available

Particle Size Distribution

No 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** Prolonged heat exposure > 70 °C. Protect against short circuit.**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** May cause sensitization by skin contact. Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). 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** Itching. Rashes. Hives.**Acute toxicity** No information available.**Numerical measures of toxicity**

The following ATE values have been calculated for the mixture:

ATEmix (dermal) 2,904.10 mg/kg

ATEmix (inhalation-dust/mist) 13.45 mg/L

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Graphite	-	-	> 2000 mg/m ³ (Rat) 4 h

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
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 ³ (Rat) 4 h
Nickel	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat) 1 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 May cause an allergic skin reaction.

Germ cell mutagenicity No information available.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

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

Chemical name	ACGIH	IARC	NTP	OSHA
Aluminum 7429-90-5	A4 - Not classifiable as a human carcinogen	-	-	-
Phosphate(1-), hexafluoro-, lithium 21324-40-3	A4 - Not classifiable as a human carcinogen	-	-	-
Carbon black 1333-86-4	A3 - Confirmed animal carcinogen (with unknown relevance to humans)	Group 2B - Possibly carcinogenic to humans	-	Present
Nickel 7440-02-0	A5 - Not suspected as a human carcinogen	Group 2B - Possibly carcinogenic to humans	Reasonably anticipated to be a human carcinogen	Present

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.

Aquatic ecotoxicity

Component Information

Chemical name	Fish	Crustacea	Algae/aquatic plants	Toxicity to microorganisms
Graphite	LC50: >100mg/L (96h, Danio rerio)	-	-	-
Copper	LC50: 0.0068 -	EC50: =0.03mg/L (48h,	EC50: 0.0426 -	-

	0.0156mg/L (96h, Pimephales promelas) LC50: <0.3mg/L (96h, Pimephales promelas) LC50: =0.2mg/L (96h, Pimephales promelas) 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)	Daphnia magna)	0.0535mg/L (72h, Pseudokirchneriella subcapitata) EC50: 0.031 - 0.054mg/L (96h, Pseudokirchneriella subcapitata)	
Nickel	LC50: >100mg/L (96h, Brachydanio rerio) LC50: =1.3mg/L (96h, Cyprinus carpio) LC50: =10.4mg/L (96h, Cyprinus carpio)	EC50: >100mg/L (48h, Daphnia magna) EC50: =1mg/L (48h, Daphnia magna)	EC50: =0.18mg/L (72h, Pseudokirchneriella subcapitata) EC50: 0.174 - 0.311mg/L (96h, Pseudokirchneriella subcapitata)	-

Persistence and degradability No information available.

Bioaccumulative potential No information available.

Mobility in soil 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) 9
Special Provisions 388, 422, A54, A100

DOT Marine Pollutant M
 Marine pollutant Copper
 Description UN3480, Lithium ion batteries, 9, Marine pollutant
 Emergency Response Guide 147
 Number

TDG

UN number or ID number UN3480
 Proper shipping name Lithium ion batteries
 Transport hazard class(es) 9
 Marine pollutant Copper.
 Description UN3480, Lithium ion batteries, 9

IATA

Notes Forbidden for transport by Passenger Air.
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 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 M
 Marine pollutant name Copper
 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
Nickel - 7440-02-0	0.1

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 Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Copper 7440-50-8	-	X	X	-

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 7440-50-8	5000 lb / 2270 kg (final RQ)	-

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
Nickel - 7440-02-0	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
Dimethyl carbonate 616-38-6	X	X	X
Aluminum 7429-90-5	X	X	X
Ethylene carbonate 96-49-1	-	X	X
Phosphate(1-), hexafluoro-, lithium 21324-40-3	X	-	-
Carbon black 1333-86-4	X	X	X
Nickel 7440-02-0	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA _____ **Health hazards** 2 **Flammability** 0 **Instability** 0 **Special hazards** -
HMIS _____ **Health hazards** 2 * **Flammability** 0 **Physical hazards** 0 **Personal protection** X
Chronic Hazard Star Legend * = Chronic Health Hazard

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

List may include phrases which are not applicable to this product

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 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 - Single exposure
TCSI	Taiwan Chemical Substance Inventory
TDG	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) (AELG(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)

Issuing Date 24-Feb-2026

Revision date 24-Feb-2026

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