

Vertiv™ Liebert® Power-UPS Lithium
SECTION 1: Identification
1.1. Identification

Product name : Vertiv™ Liebert® Power-UPS Lithium
Other name : Power-UPS Lithium

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

Use of the substance/mixture : Battery

1.3. Details of the supplier of the safety data sheet

VERTIV GROUP CORPORATION
505 N. Cleveland Ave
Westerville, OH 43082

1.4. Emergency telephone number

Emergency number : +1 800-800-5260

SECTION 2: Hazard(s) identification

For the battery cell, chemical materials are stored in a hermetically sealed case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials leakage. However, if exposed to a fire, added mechanical shocks, decomposed, or added electric stress by misuse the cell case will be breached and hazardous materials may be released. Moreover, if heated strongly by the surrounding fire, acrid gas may be emitted.

The following hazard classification may be applicable if the battery is damaged, or if proper handling and use instructions are not followed.

2.1. Classification of the substance or mixture
GHS US classification

Flam. Sol. 1 H228
Water-react. 2 H261
Acute Tox. 4 (Oral) H302
Skin Corr. 1A H314
Eye Dam. 1 H318
STOT RE 1 H372

2.2. Label elements
GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H228 - Flammable solid
H261 - In contact with water releases flammable gas
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements (GHS US) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P223 - Do not allow contact with water.
P231+P232 - Handle under inert gas. Protect from moisture.
P240 - Ground/Bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting equipment.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.
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/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.

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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.
P314 - Get medical advice/attention if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P330 - Rinse mouth.
P335+P334 - Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use media other than water to extinguish.
P402+P404 - Store in a dry place. Store in a closed container.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients
3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Lithium iron phosphate	(CAS-No.) 15365-14-7	20 – 40
Phosphate(1-), hexafluoro-, lithium	(CAS-No.) 21324-40-3	10 – 20
Aluminum	(CAS-No.) 7429-90-5	10 – 20
Graphite	(CAS-No.) 7782-42-5	10 – 20
Copper	(CAS-No.) 7440-50-8	7 – 13
Polyvinyl chloride	(CAS-No.) 9002-86-2	1 – 5

SECTION 4: First aid measures
4.1. Description of first aid measures

First-aid measures after inhalation	: If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention.
First-aid measures after skin contact	: Remove contaminated clothes and shoes immediately. After contact with skin, wash immediately with plenty of water and soap.
First-aid measures after eye contact	: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
First-aid measures after ingestion	: Get immediate medical attention.

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

Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes severe skin burns.
Symptoms/effects after eye contact	: Causes eye damage.
Symptoms/effects after ingestion	: Harmful if swallowed.

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

No additional information available

SECTION 5: Firefighting measures
5.1. Extinguishing media

Suitable extinguishing media	: Use water, or chemical powder fire extinguishing medium.
Unsuitable extinguishing media	: None.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Flammable solid. Toxic fumes, gases or vapors may be released in a fire.
Explosion hazard	: May explode or cause burns if disassembled, crushed or exposed to fire or high temperature.

5.3. Advice for firefighters

Protection during firefighting : Firefighters should wear full protective gear.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel

Avoid skin and eye contact or inhalation of vapors.

6.1.2. For emergency responders

Clear the area and allow batteries to cool and vapor to dissipate.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : No special containment necessary.

Methods for cleaning up : Collect material and place in sealed containers for reclamation or disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage
7.1. Precautions for safe handling

Precautions for safe handling : Avoid mechanical or electrical mishandling. Do not short or install with incorrect polarity. Do not open, destroy or incinerate.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a cool, dry well-ventilated area. Store away from flammable materials.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters

Phosphate(1-), hexafluoro-, lithium (21324-40-3)		
Not applicable		
Copper (7440-50-8)		
ACGIH	ACGIH OEL TWA	0.2 mg/m ³ (fume)
OSHA	OSHA PEL TWA	0.1 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
IDLH	IDLH	100 mg/m ³ (dust, fume and mist)
NIOSH	NIOSH REL (TWA)	1 mg/m ³ (dust and mist) 0.1 mg/m ³ (fume)
Aluminum (7429-90-5)		
ACGIH	ACGIH OEL TWA	1 mg/m ³ (respirable particulate matter)
OSHA	OSHA PEL TWA	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
NIOSH	NIOSH REL (TWA)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
Polyvinyl chloride (9002-86-2)		
ACGIH	ACGIH OEL TWA	1 mg/m ³ (respirable particulate matter)
Lithium iron phosphate (15365-14-7)		
Not applicable		
Graphite (7782-42-5)		
ACGIH	ACGIH OEL TWA	2 mg/m ³ (all forms except graphite fibers-respirable particulate matter)

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Graphite (7782-42-5)		
OSHA	OSHA PEL TWA	15 mg/m ³ (synthetic-total dust) 5 mg/m ³ (synthetic-respirable fraction)
IDLH	IDLH	1250 mg/m ³
NIOSH	NIOSH REL (TWA)	2.5 mg/m ³ (natural-respirable dust)

8.2. Exposure controls

Appropriate engineering controls	: General (mechanical) room ventilation is expected to be satisfactory for normal handling.
Hand protection	: None required under normal product handling conditions.
Eye protection	: None required under normal product handling conditions.
Skin and body protection	: None required under normal product handling conditions.
Respiratory protection	: If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties

Physical state	: Solid
Color	: Black
Odor	: Leaking battery will have medical ether odor.
Odor threshold	: No data available
pH	: No data available
pH solution	: Not applicable
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability	: No data available
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: completely soluble.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity
10.1. Reactivity

In contact with water releases flammable gas.

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

Avoid exposure to heat, open flame, short circuit and contact with water.

10.5. Incompatible materials

Oxidizing agents.

10.6. Hazardous decomposition products

Oxides of carbon, HF and phosphorus fluoride.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Phosphate(1-), hexafluoro-, lithium (21324-40-3)

ATE US (oral)	100 mg/kg body weight
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Skin corrosion/irritation : Causes severe skin burns.
 Serious eye damage/irritation : Causes serious eye damage.
 Respiratory or skin sensitization : Not classified
 Germ cell mutagenicity : Not classified
 Carcinogenicity : Not classified

Polyvinyl chloride (9002-86-2)

IARC group	3 - Not classifiable
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Reproductive toxicity : Not classified
 STOT-single exposure : Not classified

STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Copper (7440-50-8)

LC50 - Fish [1]	0.0068 – 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 - Crustacea [1]	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 - Fish [2]	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

UN-No. : UN3480
 Proper Shipping Name : Lithium ion batteries (Including lithium-ion polymer batteries).
 Labels for Package : Class 9

ICAO/IATA	Can be shipped by air in accordance with International Civil Aviation Organization (ICAO), TI or International Air Transport Association (IATA), DGR Packing Instructions (PI) 965 Section IB, appropriate of IATA DGR 64th (2023 Edition) for transportation
IMDG Code	International Maritime Dangerous Goods Code 40-20 under Special Provision 188
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR 2023) under Special Provision 188
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail (RID 2023) under Special Provision 188
May be shipped without being declared as Class 9 dangerous goods, when conforming to the requirements above.	
The dangerous goods regulations require that each battery design be subject to tests contained in Section 38.3 of the UN Manual of Tests and Criteria prior to being offered for transport.	

SECTION 15: Regulatory information

15.1. US Federal regulations

Phosphate(1-), hexafluoro-, lithium (21324-40-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	P - P - indicates a commenced Premanufacture Notice (PMN) substance.
Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
SARA Section 313 - Emission Reporting	1 %
Aluminum (7429-90-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1 % (dust or fume only)
Polyvinyl chloride (9002-86-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
Graphite (7782-42-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. US State regulations

Copper (7440-50-8)	
U.S. - Massachusetts - Right To Know List U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List	
Aluminum (7429-90-5)	
U.S. - Massachusetts - Right To Know List U.S. - Minnesota - Hazardous Substance List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List	

Vertiv™ Liebert® Power-UPS Lithium**Polyvinyl chloride (9002-86-2)**

U.S. - New Jersey - Right to Know Hazardous Substance List

Graphite (7782-42-5)

U.S. - Massachusetts - Right To Know List

U.S. - Minnesota - Hazardous Substance List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.

Notice to reader:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.