

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
Date of first issue: 10/15/2021

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**SECTION 1. IDENTIFICATION**

Product name : BATTERY TERMINAL PROTECTOR, 96 g  
Product code : 890.104151  
Other means of identification : No data available

**Manufacturer or supplier's details**

Company name of supplier : Würth Canada Limited  
Address : 345 Hanlon Creek Blvd  
GUELPH, ON N1C 0A1  
Telephone : +1 (905) 564 6225  
Telefax : +1 (905) 564 3671  
Emergency telephone : Emergencies involving a spill, fire, explosion or exposure:  
CHEMTREC (24/7): 1-800-424-9300  
Transport related emergencies:  
CANUTEC (24/7): 1-613-996-6666 or \* 666 (cell)  
  
Urgences impliquant un déversement, incendie, explosion ou exposition:  
CHEMTREC (24/7): 1-800-424-9300  
Urgences liées au transport:  
CANUTEC (24/7): 1-613-996-6666 ou \* 666 (cellulaire)  
  
E-mail address : prodsafe@wurth.ca

**Recommended use of the chemical and restrictions on use**

Recommended use : Corrosion inhibitor  
  
Restrictions on use : Not applicable

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**SECTION 2. HAZARDS IDENTIFICATION****GHS classification in accordance with the Hazardous Products Regulations**

Flammable aerosols : Category 1  
Gases under pressure : Liquefied gas  
Reproductive toxicity : Category 2  
Specific target organ toxicity - single exposure : Category 3

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
 Date of first issue: 10/15/2021

**GHS label elements**

Hazard pictograms



Signal Word

: Danger

Hazard Statements

 : H222 Extremely flammable aerosol.  
 H280 Contains gas under pressure; may explode if heated.  
 H336 May cause drowsiness or dizziness.  
 H361f Suspected of damaging fertility.

Precautionary Statements

**Prevention:**

P201 Obtain special instructions before use.  
 P202 Do not handle until all safety precautions have been read and understood.  
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P211 Do not spray on an open flame or other ignition source.  
 P251 Do not pierce or burn, even after use.  
 P261 Avoid breathing spray.  
 P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves, protective clothing, eye protection and face protection.

**Response:**

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.  
 P308 + P313 IF exposed or concerned: Get medical attention.

**Storage:**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
 P405 Store locked up.  
 P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C (122 °F).

**Disposal:**

P501 Dispose of contents and container to an approved waste disposal plant.

**Other hazards**

Repeated exposure may cause skin dryness or cracking.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Components**

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
 Date of first issue: 10/15/2021

Butane	Butyl hydride	106-97-8	$\geq 30 - < 60$ *
Pentane	No data available	109-66-0	$\geq 10 - < 30$ *
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	Naphtha (petroleum), hydrotreated heavy	64742-48-9	$\geq 10 - < 30$ *
Propane	Dimethylmethane	74-98-6	$\geq 5 - < 10$ *
Hydrocarbons, C6, isoalkanes, <5% n-hexane	Naphtha (petroleum), hydrotreated light	64742-49-0	$\geq 5 - < 10$ *
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	Naphtha (petroleum), hydrotreated light	64742-49-0	$\geq 5 - < 10$ *
Cyclohexane	Hexahydrobenzene	110-82-7	$\geq 1 - < 5$ *
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	Naphtha (petroleum), hydrotreated light	64742-49-0	$\geq 1 - < 5$ *
Isobutane	Propane, 2-methyl-	75-28-5	$\geq 1 - < 5$ *
Calcium petroleum sulfonates	Sulfonic acids, petroleum, calcium salts	61789-86-4	$\geq 1 - < 5$ *
n-Hexane	Hexyl hydride	110-54-3	$\geq 1 - < 5$ *

\* Actual concentration or concentration range is withheld as a trade secret

**SECTION 4. FIRST AID MEASURES**

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
 When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.  
 Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water.  
 Remove contaminated clothing and shoes.  
 Get medical attention.  
 Wash clothing before reuse.  
 Thoroughly clean shoes before reuse.
- In case of eye contact : Flush eyes with water as a precaution.  
 Get medical attention if irritation develops and persists.
- If swallowed : If swallowed, DO NOT induce vomiting.  
 Get medical attention.  
 Rinse mouth thoroughly with water.
- Most important symptoms : Prolonged or repeated contact may dry skin and cause irrita-

**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

and effects, both acute and delayed	tion. May cause drowsiness or dizziness. Suspected of damaging fertility.
Protection of first-aiders	: First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
Notes to physician	: Treat symptomatically and supportively.

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**SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media	: Water spray Alcohol-resistant foam Carbon dioxide (CO <sub>2</sub> ) Dry chemical
Unsuitable extinguishing media	: High volume water jet
Specific hazards during fire fighting	: Flash back possible over considerable distance. Vapors may form explosive mixtures with air. Exposure to combustion products may be a hazard to health. If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.
Hazardous combustion products	: Carbon oxides Metal oxides Sulfur oxides
Specific extinguishing methods	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures	: Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
Environmental precautions	: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages

## BATTERY TERMINAL PROTECTOR, 96 g

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

cannot be contained.

Methods and materials for containment and cleaning up : Non-sparking tools should be used.  
Soak up with inert absorbent material.  
Suppress (knock down) gases/vapors/mists with a water spray jet.  
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.  
Clean up remaining materials from spill with suitable absorbent.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

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### SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.  
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.  
Avoid breathing spray.  
Do not swallow.  
Avoid contact with eyes.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Take precautionary measures against static discharges.  
Take care to prevent spills, waste and minimize release to the environment.  
Do not spray on an open flame or other ignition source.

Conditions for safe storage : Store locked up.  
Keep tightly closed.  
Keep in a cool, well-ventilated place.  
Store in accordance with the particular national regulations.  
Do not pierce or burn, even after use.  
Keep cool. Protect from sunlight.

Materials to avoid : Do not store with the following product types:  
Self-reactive substances and mixtures  
Organic peroxides  
Oxidizing agents

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
 Date of first issue: 10/15/2021

Flammable solids  
 Pyrophoric liquids  
 Pyrophoric solids  
 Self-heating substances and mixtures  
 Substances and mixtures which in contact with water emit flammable gases  
 Explosives  
 Gases

Recommended storage temperature : 5 - 35 °C

Storage period : 24 Months

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
**Ingredients with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Butane	106-97-8	TWA	1,000 ppm	CA AB OEL
		TWAEV	800 ppm 1,900 mg/m <sup>3</sup>	CA QC OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
Pentane	109-66-0	TWA	600 ppm 1,770 mg/m <sup>3</sup>	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		TWAEV	1,000 ppm	CA QC OEL
		TWA	1,000 ppm	ACGIH
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, <2% aromatics	64742-48-9	TWA (Mist)	5 mg/m <sup>3</sup>	CA AB OEL
		STEL (Mist)	10 mg/m <sup>3</sup>	CA AB OEL
		TWAEV (Mist)	5 mg/m <sup>3</sup>	CA QC OEL
		STEV (Mist)	10 mg/m <sup>3</sup>	CA QC OEL
		TWA (Mist)	1 mg/m <sup>3</sup>	CA BC OEL
		TWA	525 mg/m <sup>3</sup>	CA ON OEL
Propane	74-98-6	TWA (Inhalable particulate matter)	5 mg/m <sup>3</sup>	ACGIH
		TWA	1,000 ppm	CA AB OEL
		TWAEV	1,000 ppm 1,800 mg/m <sup>3</sup>	CA QC OEL
Hydrocarbons, C6, isoalkanes, <5% n-hexane	64742-49-0	STEL	1,000 ppm 3,500 mg/m <sup>3</sup>	CA AB OEL
		TWA	500 ppm 1,760 mg/m <sup>3</sup>	CA AB OEL
		TWA (Mist)	5 mg/m <sup>3</sup>	CA AB OEL
		STEL (Mist)	10 mg/m <sup>3</sup>	CA AB OEL
		STEV	1,000 ppm	CA QC OEL

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
 Date of first issue: 10/15/2021

			3,500 mg/m <sup>3</sup>	
		TWAEV	500 ppm 1,760 mg/m <sup>3</sup>	CA QC OEL
		TWAEV (Mist)	5 mg/m <sup>3</sup>	CA QC OEL
		STEV (Mist)	10 mg/m <sup>3</sup>	CA QC OEL
		TWA	200 ppm	CA BC OEL
		TWA	500 ppm	ACGIH
		STEL	1,000 ppm	ACGIH
Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane	64742-49-0	TWA (Mist)	5 mg/m <sup>3</sup>	CA AB OEL
		STEL (Mist)	10 mg/m <sup>3</sup>	CA AB OEL
		TWAEV (Mist)	5 mg/m <sup>3</sup>	CA QC OEL
		STEV (Mist)	10 mg/m <sup>3</sup>	CA QC OEL
Cyclohexane	110-82-7	TWA	100 ppm 344 mg/m <sup>3</sup>	CA AB OEL
		TWA	100 ppm	CA BC OEL
		TWAEV	300 ppm 1,030 mg/m <sup>3</sup>	CA QC OEL
		TWA	100 ppm	ACGIH
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, <2% aromatics	64742-49-0	TWA (Mist)	5 mg/m <sup>3</sup>	CA AB OEL
		STEL (Mist)	10 mg/m <sup>3</sup>	CA AB OEL
		TWAEV (Mist)	5 mg/m <sup>3</sup>	CA QC OEL
		STEV (Mist)	10 mg/m <sup>3</sup>	CA QC OEL
Isobutane	75-28-5	TWA	1,000 ppm	CA AB OEL
		TWA	1,000 ppm	CA BC OEL
		STEL	1,000 ppm	ACGIH
n-Hexane	110-54-3	TWA	50 ppm 176 mg/m <sup>3</sup>	CA AB OEL
		TWA	20 ppm	CA BC OEL
		TWAEV	50 ppm 176 mg/m <sup>3</sup>	CA QC OEL
		TWA	50 ppm	ACGIH

**Biological occupational exposure limits**

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
n-Hexane	110-54-3	2,5-Hexanedione	Urine	End of shift	0.5 mg/l	ACGIH BEI
Cyclohexane	110-82-7	1,2-Cyclohexanediol	Urine	End of shift at end of work-week	50 mg/g Creatinine	ACGIH BEI

**Engineering measures** : Minimize workplace exposure concentrations.  
 If sufficient ventilation is unavailable, use with local exhaust

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
Date of first issue: 10/15/2021

---

ventilation.

If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

**Personal protective equipment**

- Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
- Filter type : Self-contained breathing apparatus
- Hand protection
- Material : Nitrile rubber
- Break through time : 120 min
- Glove thickness : 0.8 mm
- Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.
- Eye protection : Wear the following personal protective equipment:  
Safety glasses  
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.  
Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.
- Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Wear the following personal protective equipment:  
If assessment demonstrates that there is a risk of explosive atmospheres or flash fires, use flame retardant antistatic protective clothing.  
Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).
- Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Wash contaminated clothing before re-use.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance : Aerosol containing a liquefied gas



**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Propellant	:	Isobutane, Butane, Propane
Color	:	blue
Odor	:	hydrocarbon-like
Odor Threshold	:	No data available
pH	:	substance/mixture is non-soluble (in water)
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	Not applicable
Flash point	:	-49 °C Flash point is only valid for liquid portion in the aerosol can.
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Extremely flammable aerosol.
Upper explosion limit / Upper flammability limit	:	11 %(V)
Lower explosion limit / Lower flammability limit	:	1 %(V)
Vapor pressure	:	2,600 - 3,500 hPa (20 °C)
Relative vapor density	:	Not applicable
Density	:	0.64 g/cm <sup>3</sup> (20 °C)
Solubility(ies) Water solubility	:	immiscible
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	250 °C
Decomposition temperature	:	The substance or mixture is not classified self-reactive.
Viscosity Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive

**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Particle size : Not applicable

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**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Extremely flammable aerosol.  
Vapors may form explosive mixture with air.  
If the temperature rises there is danger of the vessels bursting due to the high vapor pressure.  
Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

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**SECTION 11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Not classified based on available information.

**Components:****Butane:**

Acute inhalation toxicity : LC50 (Rat): 658 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor

**Pentane:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 20 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 403  
Remarks: Based on data from similar materials

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
Date of first issue: 10/15/2021

---

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Remarks: Based on data from similar materials
- Acute inhalation toxicity : LC50 (Rat): > 20 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Remarks: Based on data from similar materials
- Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
Remarks: Based on data from similar materials

**Propane:**

- Acute inhalation toxicity : LC50 (Rat): > 800000 ppm  
Exposure time: 15 min  
Test atmosphere: gas

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

- Acute oral toxicity : LD50 (Rat): 16,750 mg/kg  
Remarks: Based on data from similar materials
- Acute inhalation toxicity : LC50 (Rat): 259.354 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Remarks: Based on data from similar materials
- Acute dermal toxicity : LD50 (Rabbit): > 3,350 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: Based on data from similar materials

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Remarks: Based on data from similar materials
- Acute inhalation toxicity : LC50 (Rat): > 20 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials
- Acute dermal toxicity : LD50 (Rat): > 3,350 mg/kg  
Remarks: Based on data from similar materials

**Cyclohexane:**

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
- Acute inhalation toxicity : LC50 (Rat): > 19.07 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor

## BATTERY TERMINAL PROTECTOR, 96 g

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 4,951 mg/m<sup>3</sup>  
Exposure time: 4 h  
Test atmosphere: vapor  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: Based on data from similar materials

**Isobutane:**

Acute inhalation toxicity : LC50 (Mouse): 260200 ppm  
Exposure time: 4 h  
Test atmosphere: gas

**Calcium petroleum sulfonates:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 1.9 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 4,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**n-Hexane:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 31.86 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
Date of first issue: 10/15/2021

---

**Skin corrosion/irritation**

Not classified based on available information.

**Product:**

Result : No skin irritation

**Components:****Pentane:**

Species : Rabbit  
Result : No skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Species : Rabbit  
Result : Mild skin irritation  
Remarks : Based on data from similar materials

Assessment : Repeated exposure may cause skin dryness or cracking.

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Skin irritation

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
Remarks : Based on data from similar materials

Assessment : Repeated exposure may cause skin dryness or cracking.

**Cyclohexane:**

Species : Rabbit  
Result : Skin irritation

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Species : Rabbit  
Result : Mild skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

**Calcium petroleum sulfonates:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation

**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Remarks : Based on data from similar materials

**n-Hexane:**

Species : Rabbit  
Result : Skin irritation  
Remarks : Based on data from similar materials

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****Pentane:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405  
Remarks : Based on data from similar materials

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Species : Rabbit  
Result : No eye irritation  
Remarks : Based on data from similar materials

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Species : Rabbit  
Result : No eye irritation  
Remarks : Based on data from similar materials

**Cyclohexane:**

Species : Rabbit  
Result : No eye irritation

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405  
Remarks : Based on data from similar materials

**Calcium petroleum sulfonates:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405  
Remarks : Based on data from similar materials

**BATTERY TERMINAL PROTECTOR, 96 g**

Version            Revision Date:            SDS Number:            Date of last issue: 11/16/2022  
2.1                06/08/2023              9871895-00005        Date of first issue: 10/15/2021

---

**n-Hexane:**

Species                                : Rabbit  
Result                                 : No eye irritation

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Components:****Pentane:**

Test Type                                : Maximization Test  
Routes of exposure                        : Skin contact  
Species                                    : Guinea pig  
Result                                     : negative

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Test Type                                : Maximization Test  
Routes of exposure                        : Skin contact  
Species                                    : Guinea pig  
Result                                     : negative  
Remarks                                  : Based on data from similar materials

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Test Type                                : Local lymph node assay (LLNA)  
Routes of exposure                        : Skin contact  
Species                                    : Mouse  
Result                                     : negative  
Remarks                                  : Based on data from similar materials

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Test Type                                : Local lymph node assay (LLNA)  
Routes of exposure                        : Skin contact  
Species                                    : Mouse  
Result                                     : negative  
Remarks                                  : Based on data from similar materials

**Cyclohexane:**

Test Type                                : Buehler Test  
Routes of exposure                        : Skin contact  
Species                                    : Guinea pig  
Result                                     : negative

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Test Type                                : Maximization Test  
Routes of exposure                        : Skin contact  
Species                                    : Guinea pig

## BATTERY TERMINAL PROTECTOR, 96 g

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
Date of first issue: 10/15/2021

---

Result : negative  
Remarks : Based on data from similar materials

**Calcium petroleum sulfonates:**

Test Type : Buehler Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Result : positive

Assessment : Probability or evidence of low to moderate skin sensitization rate in humans

**n-Hexane:**

Test Type : Local lymph node assay (LLNA)  
Routes of exposure : Skin contact  
Species : Mouse  
Result : negative

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****Butane:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

**Pentane:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Method: Directive 67/548/EEC, Annex V, B.10.  
Result: negative

Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: inhalation (vapor)  
Method: Directive 67/548/EEC, Annex V, B.12.  
Result: negative

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)



**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Method: OECD Test Guideline 471  
 Result: negative  
 Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
 Result: negative  
 Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
 Result: negative  
 Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)  
 Species: Rat  
 Application Route: inhalation (vapor)  
 Result: negative

**Propane:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
 Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo  
 cytogenetic assay)  
 Species: Rat  
 Application Route: inhalation (gas)  
 Method: OECD Test Guideline 474  
 Result: negative

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
 Result: negative  
 Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro  
 Result: negative  
 Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
 Result: negative  
 Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow  
 cytogenetic test, chromosomal analysis)  
 Species: Rat  
 Application Route: inhalation (vapor)  
 Result: negative

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
 Result: negative  
 Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
Date of first issue: 10/15/2021

---

Result: negative  
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative

**Cyclohexane:**

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Result: negative

Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Result: negative  
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Ingestion  
Result: negative

**Isobutane:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative  
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Rat  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 474  
Result: negative  
Remarks: Based on data from similar materials

**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

**Calcium petroleum sulfonates:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo cyto-genetic assay)  
Species: Mouse  
Application Route: Ingestion  
Result: negative

**n-Hexane:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)  
Species: Mouse  
Application Route: inhalation (vapor)  
Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cyto-genetic test, chromosomal analysis)  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative  
Remarks: Based on data from similar materials

**Carcinogenicity**

Not classified based on available information.

**Components:**
**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Species : Rat  
Application Route : inhalation (vapor)  
Exposure time : 2 Years  
Result : negative  
Remarks : Based on data from similar materials

Species : Mouse  
Application Route : inhalation (vapor)  
Exposure time : 2 Years  
Result : negative  
Remarks : Based on data from similar materials

## BATTERY TERMINAL PROTECTOR, 96 g

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
Date of first issue: 10/15/2021

---

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Species : Rat  
Application Route : inhalation (vapor)  
Exposure time : 2 Years  
Result : negative  
Remarks : Based on data from similar materials

Species : Mouse  
Application Route : inhalation (vapor)  
Exposure time : 2 Years  
Result : negative  
Remarks : Based on data from similar materials

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Species : Rat  
Application Route : inhalation (vapor)  
Exposure time : 105 weeks  
Result : negative  
Remarks : Based on data from similar materials

**n-Hexane:**

Species : Mouse  
Application Route : inhalation (vapor)  
Exposure time : 2 Years  
Method : OECD Test Guideline 451  
Result : negative  
Remarks : Based on data from similar materials

**Reproductive toxicity**

Suspected of damaging fertility.

**Components:****Butane:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 422  
Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 422  
Result: negative

**Pentane:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative

**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: negative

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative  
Remarks: Based on data from similar materials

**Propane:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 422  
Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 422  
Result: negative

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative  
Remarks: Based on data from similar materials

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat

## BATTERY TERMINAL PROTECTOR, 96 g

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Application Route: inhalation (vapor)  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative  
Remarks: Based on data from similar materials

**Cyclohexane:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: inhalation (vapor)  
Result: negative

**Isobutane:**

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: Inhalation  
Method: OECD Test Guideline 422  
Result: negative

Effects on fetal development : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test  
Species: Rat  
Application Route: inhalation (gas)  
Method: OECD Test Guideline 422  
Result: negative

**Calcium petroleum sulfonates:**

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 415  
Result: negative  
Remarks: Based on data from similar materials

**n-Hexane:**

Effects on fertility : Test Type: Fertility/early embryonic development  
Application Route: inhalation (vapor)  
Result: positive

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Mouse  
Application Route: inhalation (vapor)

## BATTERY TERMINAL PROTECTOR, 96 g

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Result: negative

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments.

**STOT-single exposure**

May cause drowsiness or dizziness.

**Components:****Butane:**

Assessment : May cause drowsiness or dizziness.

**Pentane:**

Assessment : May cause drowsiness or dizziness.

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Assessment : May cause drowsiness or dizziness.

**Propane:**

Assessment : May cause drowsiness or dizziness.

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Assessment : May cause drowsiness or dizziness.

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Assessment : May cause drowsiness or dizziness.

**Cyclohexane:**

Assessment : May cause drowsiness or dizziness.

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Assessment : May cause drowsiness or dizziness.

**Isobutane:**

Assessment : May cause drowsiness or dizziness.

**n-Hexane:**

Assessment : May cause drowsiness or dizziness.

**STOT-repeated exposure**

Not classified based on available information.

**Components:****n-Hexane:**

Routes of exposure : inhalation (vapor)

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
Date of first issue: 10/15/2021

---

Target Organs : Central nervous system  
Assessment : May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Components:****Butane:**

Species : Rat  
NOAEL : 9000 ppm  
Application Route : inhalation (gas)  
Exposure time : 6 Weeks  
Method : OECD Test Guideline 422

**Pentane:**

Species : Rat  
NOAEL : > 6700 ppm  
Application Route : inhalation (gas)  
Exposure time : 13 Weeks  
Method : OECD Test Guideline 413

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Species : Rat  
NOAEL : > 100 mg/kg  
Application Route : Ingestion  
Exposure time : 13 Weeks  
Remarks : Based on data from similar materials

Species : Rat  
NOAEL : > 1 mg/l  
Application Route : inhalation (vapor)  
Exposure time : 90 Days  
Remarks : Based on data from similar materials

Species : Rat  
LOAEL : 500 mg/kg  
Application Route : Skin contact  
Exposure time : 28 Days

**Propane:**

Species : Rat  
NOAEL : 7.214 mg/l  
Application Route : inhalation (gas)  
Exposure time : 6 Weeks  
Method : OECD Test Guideline 422

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Species : Rat, male  
NOAEL : 10.504 mg/l  
Application Route : inhalation (vapor)  
Exposure time : 90 Days



**BATTERY TERMINAL PROTECTOR, 96 g**

Version          Revision Date:          SDS Number:          Date of last issue: 11/16/2022  
2.1                06/08/2023                9871895-00005          Date of first issue: 10/15/2021

---

Remarks                                :    Based on data from similar materials

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Species                                :    Rat, male  
NOAEL                                 :    10.504 mg/l  
LOAEL                                 :    31.652 mg/l  
Application Route                   :    inhalation (vapor)  
Exposure time                       :    13 Weeks  
Remarks                               :    Based on data from similar materials

**Cyclohexane:**

Species                                :    Rat  
NOAEL                                 :    24.08 mg/l  
Application Route                   :    inhalation (vapor)  
Exposure time                       :    90 Days

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Species                                :    Rat  
NOAEL                                 :    10,186 mg/m<sup>3</sup>  
Application Route                   :    inhalation (vapor)  
Exposure time                       :    13 Weeks

**Isobutane:**

Species                                :    Rat  
NOAEL                                 :    9000 ppm  
Application Route                   :    inhalation (gas)  
Exposure time                       :    6 Weeks  
Method                                 :    OECD Test Guideline 422

**Calcium petroleum sulfonates:**

Species                                :    Rat  
   :    > 1000 mg/kg  
Application Route                   :    Skin contact  
Exposure time                       :    28 Days  
Method                                 :    OECD Test Guideline 410  
Remarks                               :    Based on data from similar materials

**n-Hexane:**

Species                                :    Mouse  
LOAEL                                 :    1.76 mg/l  
Application Route                   :    inhalation (vapor)  
Exposure time                       :    13 Weeks

Species                                :    Rat, male  
NOAEL                                 :    568 mg/kg  
LOAEL                                 :    3,973 mg/kg  
Application Route                   :    Ingestion  
Exposure time                       :    90 Days

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
Date of first issue: 10/15/2021

---

**Aspiration toxicity**

Not classified based on available information.

**Components:****Pentane:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**Cyclohexane:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**n-Hexane:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**Experience with human exposure****Components:****n-Hexane:**

Inhalation : Target Organs: Central nervous system  
Symptoms: Central nervous system depression

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Pentane:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.26 mg/l

**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.7 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Scenedesmus capricornutum (fresh water algae)): 10.7 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Scenedesmus capricornutum (fresh water algae)): 2.04 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

**Ecotoxicology Assessment**

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.  
Remarks: Based on national or regional regulation.

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 1,000 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201

NOELR (Pseudokirchneriella subcapitata (green algae)): 100 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 10 - 100 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 1 - 10 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 202

**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (*Selenastrum capricornutum* (green algae)): > 10 - 100 mg/l  
 Exposure time: 72 h  
 Test substance: Water Accommodated Fraction  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

NOELR (*Selenastrum capricornutum* (green algae)): 0.1 mg/l  
 Exposure time: 72 h  
 Test substance: Water Accommodated Fraction  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR (*Daphnia magna* (Water flea)): > 0.1 - 1 mg/l  
 Exposure time: 21 d  
 Method: OECD Test Guideline 211  
 Remarks: Based on data from similar materials

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Toxicity to fish : LL50 (*Oncorhynchus mykiss* (rainbow trout)): 12 mg/l  
 Exposure time: 96 h  
 Test substance: Water Accommodated Fraction  
 Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (*Daphnia magna* (Water flea)): 3 mg/l  
 Exposure time: 48 h  
 Test substance: Water Accommodated Fraction

Toxicity to algae/aquatic plants : EL50 (*Selenastrum capricornutum* (green algae)): > 10 - 100 mg/l  
 Exposure time: 72 h  
 Test substance: Water Accommodated Fraction  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

NOELR (*Selenastrum capricornutum* (green algae)): 0.1 mg/l  
 Exposure time: 72 h  
 Test substance: Water Accommodated Fraction  
 Method: OECD Test Guideline 201  
 Remarks: Based on data from similar materials

**Cyclohexane:**

Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): 4.53 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 0.9 mg/l  
 Exposure time: 48 h

Toxicity to algae/aquatic plants : NOEC (*Pseudokirchneriella subcapitata* (green algae)): 0.94 mg/l  
 Exposure time: 72 h

## BATTERY TERMINAL PROTECTOR, 96 g

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

EC50 (Pseudokirchneriella subcapitata (green algae)): 9.32 mg/l  
Exposure time: 72 h

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 10 - 30 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 22 - 46 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

NOELR (Pseudokirchneriella subcapitata (green algae)): 1 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

**Calcium petroleum sulfonates:**

Toxicity to fish : LL50 (Cyprinodon variegatus (sheepshead minnow)): > 10,000 mg/l  
Exposure time: 96 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Remarks: Based on data from similar materials

NOEC (Pseudokirchneriella subcapitata (green algae)): 1,000 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Remarks: Based on data from similar materials

**BATTERY TERMINAL PROTECTOR, 96 g**

Version 2.1      Revision Date: 06/08/2023      SDS Number: 9871895-00005      Date of last issue: 11/16/2022  
Date of first issue: 10/15/2021

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Toxicity to microorganisms : EC50: > 10,000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

**n-Hexane:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2.5 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 3.88 mg/l  
Exposure time: 48 h  
Test substance: Water Accommodated Fraction

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): 55 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

NOEL (Pseudokirchneriella subcapitata (green algae)): 30 mg/l  
Exposure time: 72 h  
Test substance: Water Accommodated Fraction  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

**Persistence and degradability****Components:****Butane:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 385.5 h  
Remarks: Based on data from similar materials

**Pentane:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 87 %  
Exposure time: 28 d

**Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 80 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

**Propane:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 385.5 h  
Remarks: Based on data from similar materials

**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue:
2.1	06/08/2023	9871895-00005	11/16/2022
			Date of first issue: 10/15/2021

---

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 98 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 81 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

**Cyclohexane:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 77 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

**Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics ,<2% aromatics:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 89 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

**Isobutane:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 100 %  
Exposure time: 385.5 h  
Remarks: Based on data from similar materials

**Calcium petroleum sulfonates:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 8.6 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

**n-Hexane:**

Biodegradability : Result: Readily biodegradable.  
Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

**Bioaccumulative potential****Components:****Butane:**

## BATTERY TERMINAL PROTECTOR, 96 g

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

Partition coefficient: n-octanol/water : log Pow: 2.31

**Pentane:**

Partition coefficient: n-octanol/water : log Pow: 3.45

**Hydrocarbons, C6, isoalkanes, <5% n-hexane:**

Partition coefficient: n-octanol/water : log Pow: 3.6

**Hydrocarbons, C6-C7, isoalkanes, cyclics, <5% n-hexane:**

Partition coefficient: n-octanol/water : log Pow: > 3 - < 4  
Remarks: Based on data from similar materials

**Cyclohexane:**

Partition coefficient: n-octanol/water : log Pow: 3.44

**Isobutane:**

Partition coefficient: n-octanol/water : log Pow: 2.8

**Calcium petroleum sulfonates:**

Partition coefficient: n-octanol/water : log Pow: > 6.65

**n-Hexane:**

Partition coefficient: n-octanol/water : log Pow: 4

**Mobility in soil**

No data available

**Other adverse effects**

No data available

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**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.

Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Empty containers retain residue and can be dangerous.  
Do not pressurize, cut, weld, braze, solder, drill, grind, or ex-



**BATTERY TERMINAL PROTECTOR, 96 g**

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

---

pose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product. Please ensure aerosol cans are sprayed completely empty (including propellant)

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**SECTION 14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

UN number	: UN 1950
Proper shipping name	: AEROSOLS
Class	: 2.1
Packing group	: Not assigned by regulation
Labels	: 2.1

**IATA-DGR**

UN/ID No.	: UN 1950
Proper shipping name	: Aerosols, flammable
Class	: 2.1
Packing group	: Not assigned by regulation
Labels	: Flammable Gas
Packing instruction (cargo aircraft)	: 203
Packing instruction (passenger aircraft)	: 203

**IMDG-Code**

UN number	: UN 1950
Proper shipping name	: AEROSOLS (Pentane, Hydrocarbons, C6, isoalkanes, <5% n-hexane)
Class	: 2.1
Packing group	: Not assigned by regulation
Labels	: 2.1
EmS Code	: F-D, S-U
Marine pollutant	: yes

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Domestic regulation****TDG**

UN number	: UN 1950
Proper shipping name	: AEROSOLS
Class	: 2.1
Packing group	: Not assigned by regulation
Labels	: 2.1
ERG Code	: 126
Marine pollutant	: yes(Pentane, Hydrocarbons, C6, isoalkanes, <5% n-hexane)

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data

## BATTERY TERMINAL PROTECTOR, 96 g

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### SECTION 15. REGULATORY INFORMATION

**Volatile organic compounds (VOC) content** CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999 - Guidelines for VOC in Consumer Products  
VOC content: 93.05 % / 595.52 g/l

**The ingredients of this product are reported in the following inventories:**

NDSL : This product contains one or several components listed in the Canadian NDSL.

### SECTION 16. OTHER INFORMATION

#### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
CA AB OEL / TWA	:	8-hour Occupational exposure limit
CA AB OEL / STEL	:	15-minute occupational exposure limit
CA BC OEL / TWA	:	8-hour time weighted average
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
CA QC OEL / TWA EV	:	Time-weighted average exposure value
CA QC OEL / STEV	:	Short-term exposure value

AllC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; 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; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECl - Korea 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect

## BATTERY TERMINAL PROTECTOR, 96 g

Version	Revision Date:	SDS Number:	Date of last issue: 11/16/2022
2.1	06/08/2023	9871895-00005	Date of first issue: 10/15/2021

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Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 06/08/2023  
Date format : mm/dd/yyyy

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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