## SECTION 1: IDENTIFICATION

**Product Identifier:** PROPELLANT CUP
**Product Names and Synonyms:** Propellant cup & 2 Pull Wire Lighters
**Product code:** Prop#6,Prop#8,Prop#10,Prop#12,Prop#14,Prop#16,Prop#18, Prop#20,Prop#24,Prop#28,Prop#30,Prop#32,Prop#36,Prop#40, Prop#42,Prop#48,Prop#50,Prop#60,Prop#90
**Intended Use:** Avalanche control
**Use advised against:** Do not use indoors or inside a vehicle

**Name, Address, and Telephone of the Responsible Party:**

CIL Avalanche Ltd
1501-10 Ave Unit C
Fernie, BC, Canada
V0B 1M0
Email: avalancheorders@cilavalanche.com
www.cilavalanche.com

**In Case of Emergency Call CHEMTREC – TOLL FREE 24/7**

**800-424-9300 DOMESTIC**
**1-703-527-3887 INTERNATIONAL AND MARINE**

## SECTION 2: HAZARDS IDENTIFICATION

### Classification of the Substance or Mixture:

| Hazard Class | Hazard Category |
|---|---|
| Explosives | 1.4 |
| Acute Toxicity | 5 |
| Skin Corrosion / Irritation | 2 |
| Serious Eye Damage / Irritation | 1 |
| Aquatic Environment - Chronic | 3 |

### Label Elements

**Danger**

### Hazard Statements

| | |
|---|---|
| H203 | Explosive, fire, blast or projection hazard |
| H204 | Fire or projection hazard |
| H271 | May cause fire or explosion; strong oxidizer |
| H302 | Harmful if swallowed |
| H311 | Cause severe skin burns and eye damage |

### Precautionary Statements

| | |
|---|---|
| P102 | Keep out of reach of children |
| P210 | Keep away from heat/sparks/open flames/hot surfaces. - No smoking. |
| P220 | Keep/Store away from combustible materials |
| P232 | Protect from moisture |
| P242 | Use only non-sparking tools |
| P260 | Do not breathe dust/fume/gas/mist/vapor/spray |
| P271 | Use only outdoors or in a well-ventilated area |
| P273 | Avoid release to the environment |
| P280 | Use personal protective equipment as required |

### Other Hazards:

None

**Unknown Acute Toxicity:** Not available

## SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

| Component | CAS # | EINCS # | %AGE |
|---|---|---|---|
| Potassium Nitrate | 7757-79-1 | 231-818-8 | 70-76 |
| Sulfur | 7704-34-9 | 231-722-6 | 9-20 |
| Charcoal | 68-647-869 | 231-153-3 | 8-18 |
| Potassium Chlorate | 3811-04-9 | 231-100-4 | 1-5 |
| Ethyl Alcohol | 64-17-5 | 200-578-6 | 1-5 |
| Acetone | 67-64-1 | 200-662-2 | 1-5 |
| Red Phosphorus | 7723-14-0 | 231-768-7 | 1-2 |
| Cellulose Nitrate | 9004-70-0 | None | 1-2 |
| Dextrin | 9004-53-9 | 232-675-4 | 1-2 |
| Orange Flake Shellac | 9000-59-3 | 232-549-9 | 1-2 |

Note : Due to Confidential Business Information i.e "Trade Secrets", the exalt percentage of each ingredient has not been disclosed. CBI information will be shared with appropriate authorities if circumstances warrant.

## SECTION 4: FIRST AID MEASURES

**General:**

**Inhalation:** If contents are inhaled, remove to fresh air. Watch for signs of allergic reaction. If other symptoms develop, get medical aid immediately.

**Skin Contact:** If contents are contacted, wash area with soap and water for 15 minutes. Remove contaminated clothing and wash before reuse. Get medical aid if irritation occurs.

**Eye Contact:** If contents get into eye, flush with plenty or water for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses if easily possible. Get medical aid immediately. If burned, cool with water and bandage appropriately.

**Ingestion:** Get medical aid immediately.

### Most important symptoms and effects, both acute and delayed

Symptons and effect : See section 2 labeling and section 11

### Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5: FIRE FIGHTING MEASURES

### Extinguishing Media

**Suitable Extinguishing Media:** Water deluge

**Unsuitable Extinguishing Media:** Foam and dry chemical extinguishers and suffocation are ineffective

### Special hazards arising from the chemical

**Fire Hazard:** DO NOT FIGHT EXPLOSIVES FIRES

**Explosion hazard :** Possible projection hazard

**Reactivity:** N/A

### Advice for Firefighters

**Firefighting Instructions:** Prevent further propagation of fire by spraying unburnt nearby product with water. Combat fire from a sheltered position.

**Protection during firefighting:** Wear full protective clothing and NIOSH-approved self-container apparatus with full face piece operated in the pressure demand or other positive pressure mode. Do not fight fire when fire reaches cargo. Cargo may explode.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

| | |
|---|---|
| **Protective Equipment:** | Wear flame retardant clothing with long sleeves, dust mask, rubber or nitrile gloves, safety goggles, safety shoes. Isolate area and remove sources of friction, impact, heat, low level electrical currect, electrostatic or RF energy. |
| **Emergency Procedures:** | Do not breathe contents and avoid contact with skin and eyes. Avoid friction on the released product. Keep away from ignition sources. |

### Environmental precautions

Prevent dispersion of contents on soil and in water. Prevent contents from spreading or entering into drains, ditches, groundwater or rivers by using appropriate barriers. Clean up spills immediately using non-sparkling utensils. Do not dispose of in the ground

### Methods and material for containment and cleaning up

| | |
|---|---|
| **For containment:** | Do not absorb in sawdust or other combustible absorbents. Pick up spill for recovery or disposal and place in an approved container. |
| **Methods for cleaning up:** | Use caution when cleaning up spilled product contents. Remove heat, flames, sparks, and other sources of ignition. Use non- sparking tools and equipment. Prevent buildup of electrostatic charges by grounding. Clean spills in a manner that does not disperse dust into the air. Wash away remainder with plenty of water. Collect wash water for approved disposal. |

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe Handling

| | |
|---|---|
| **Precautions for safe handling :** | Use appropriate personal protective equipment. Workers should wash hands thoroughly after handling. Eating, drinking and smoking should be prohibited in areas where this material is handled and stored. |
| **Hygiene Measures:** | Wash thoroughly after handling. |

### Conditions for Safe Storage, Including Any Incompatibilities

| | |
|---|---|
| **Storage conditions :** | Store away from moisture, direct sunlight, heat and incompatible materials. Store away from food and beverages |
| **Incompatible products :** | Reducing agents, Organic materials, Finely Powdered metals, Acids, Water, Halogens |
| **Incompatible materials :** | Reducing agents, Organic materials, Finely Powdered metals, Acids, Water, Halogens |
| **Storage temperature :** | Ambient temperature |
| **Heat and ignition sources :** | Store away from flammable materials, sources of heat, flame and sparks. |
| **Prohibitions on mixed storage :** | Reducing agents, Organic materials, Finely Powdered metals, Acids, Water, Halogens |
| **Storage area :** | Dry at ambient temperature |
| **Special rules on packaging :** | Store in original container |

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

| Exposure Limits | OSHA PEL | ACGIH TLV |
|---|---|---|
| Potassium Nitrate | None listed | None listed |
| Sulfur | 5 ppm | 0.25 ppm |
| Charcoal | Nuisance dust 15 mg/m3 | Nuisance dust 15 mg/m3 |
| Potassium Chlorate | No Airborne Exposure Limits Established | No Airborne Exposure Limits Established |
| Ethyl Alcohol | 1000 ppm (1900 mg/cu m) | 8 hr time Weighted Avg (TWA) : 1000 ppm |
| Acetone | 1000 ppm TWA | 500 ppm TWA 750 ppm STEL |
| Red Phosphorus | Nuisance dust 15 mg/m3 | Nuisance dust 15 mg/m3 |
| Cellulose Nitrate | Not stated | Not stated |
| Dextrin | 15 mg/m3 total dust | 10 mg/m3 |
| Orange Flake Shellac | None | None |

### Exposure Controls:

**Appropriate Engineering Controls:** Local exhaust ventilation is recommended if significant dusting occurs or fumes are generated. Otherwise, use general exhaust ventilation.

### Personal Protective Equipment:

**Hand Protection:** None under normal conditions when using product unless prolonged handling is anticipated. When cleaning up spilled contents, wear gloves.

**Eye Protection:** Wear safety glasses or goggles during use and when cleaning up spilled contents.

**Skin and body protection:** None under normal conditions when using product unless prolonged handling is anticipated. When cleaning up spilled contents, wear impervious protective clothing, including gloves, boots, and a lab coat, apron or coveralls, as appropriate. Wash hands and face before eating, drinking or using tobacco products.

**Respiratory protection :** None under normal conditions when using product. A particulate respirator (NIOSH t N95 or better filters) may be worn during the cleanup of spilled contents.

**Other information :** Use product outdoors away from combustible products. For cleanup of spilled contents, emergency showers and eye wash stations should be available. Educate and train employees in the safe use and handling of hazardous materials. Maintain good housekeeping and safety practices. Do not let contents accumulate in storage or work areas. Clean spills up prompty.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on Physical and Chemical Properties:

Physical state : Solid
Appearance : Flanged capsule
Molecular mass : No data available

| | |
|---|---|
| Physical state : | Wooden cup filled with a granular powder |
| Appearance : | wooden cup |
| Molecular mass : | No data available |
| Colour : | Brown |
| Odour : | No data available |
| Odour threshold : | No data available |
| PH : | Not available |
| Relative evaporation rate : | Not available |
| Melting point : | Not available |
| Freezing point : | Not available |
| Boiling point : | Not available |
| Flash point : | Not available |
| Critical temperature : | No data available |
| Self ignition temperature : | No data available |
| Decomposition temperature : | 82 degrees Celsius |
| Flammability : | No data available |
| Vapour pressure : | Not available |
| Critical pressure : | No data available |
| Relative density : | No data available |
| Density : | Not applicable |
| Solubility : | Not available |
| Log Pow : | Not available |
| Log Kow : | Not available |
| Viscosity : | No data available |
| Explosive properties : | Not available |
| Oxidising properties : | Not available |
| Explosive limits : | Not available |
| Auto ignition temperature : | No data available |

## SECTION 10: STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity:** | N/A |
| **Chemical Stability:** | Stable |
| **Possibility of Hazardous Reactions:** | Hazardous polymerization will not occur |
| **Conditions to Avoid:** | Avoid heat, impact, friction or static. Profect against heat effects. Keep away from heat, open flame and ignition sources. A violent burn or deflagration could occur by above mentioned items. |
| **Incompatible Materials:** | Acids, Class A & B explosives, strong oxidizers, and caustics |
| **Hazardous Combustion Products:** | Detonation produces hazardous overpressures and fragments (if confined). Gases produced may be toxic if exposed in areas with inadequate ventilation. Hazardous gases produces are carbon monoxide and nitrogen oxides. Burning red amorphous phosphorous gives off dense white smoke of phosphorous pentoxide, an irritant that absorbs water to become phosphoric acid, which is corrosive. |

## SECTION 11: TOXICOLOGY INFORMATION

**Information on toxicological effects:**

| Ingredient | Oral LD50 | Skin LD50 | LC50 |
|---|---|---|---|
| Potassium Nitrate | Rabbit : 1,166 g anion/kg | Not stated | Not stated |
| Sulfur | Not stated | Not stated | Not stated |
| Charcoal | Rat : 5000 mg/kg | Not stated | Not stated |
| Potassium Chlorate | Rat : 1870 mg/kg | No information found | No information found |

| | | | |
|---|---|---|---|
| Ethyl Alcohol | Mouse : 3450 mg/kg | Not stated | LC 50 mouse inhalation 39 mg/cu m/h hrs |
| Acetone | Not stated | Not stated | Not stated |
| Red Phosphorus | Rat > 10,000 mg/kg | Not stated | Not stated |
| Cellulose Nitrate | None | None | None |
| Dextrin | Not stated | Not stated | Not stated |
| Orange Flake Shellac | Ingredients considered non-hazardous | Ingredients considered non-hazardous | Ingredients considered non-hazardous |

## SECTION 12: ECOLOGY INFORMATION

### Toxicity

**Aquatic Toxicity :**

Potassium Chlorate : Fish : LC50 oncorhynchus mykiss (Rainbow Trout) 1750 mg/l - 96 hr, EC50 daphnia magna (water flea) 1093 mg/l 24 hr.
Red Phosphorus : Harmful to aquatic organisms and may cause long term effects in the aquatic environment 10 mg/l < EC50/EC50/LC50<100 gm/l, (daphnia, algae, fish)
Ethyl Alcohol : LC50 Salmo gairdnerii (Rainbow trout) 13000 mg/L/96 hr at 12 deg C (95% Confidence limit 12000-16000 mg/L) wt 0.8g/Static bioassay; LC50 Pimephales promelas (Fathead minnows) 15.3 g/L/96 hr (95% confidence limit 14.0- 16.6 g/L); age 30 days old, water hardness 47.3 mg/L (CaCO3), temp 24.3 deg C, PH 7.60, dissolved oxygen 6.8 mg/L, alkalinity 43.7 mg/L (CaCO3); tank vol: 6.3 L; additions : 3.81 vol/day/Flow- through bioassay/

### Persistence and degradability

Not biodegradable.

### Bioaccumulative potential

No information found

### Mobility in environmental media

No information found

### Other adverse effects

No information found

## SECTION 13: DISPOSAL CONSIDERATIONS

Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding the treatment, storage and disposal for hazardous and nonhazardous wastes.

## SECTION 14: TRANSPORTATION INFORMATION

**UN number:** UN0323
**UN proper shipping name:** Cartridges, Powder Device
**UN hazard class:** 1.4S
**UN DG Placard :**


**Packing group** II - Medium Danger

## SECTION 15: REGULATORY INFORMATION

### US Federal Regulations:

| US Regulations | TSCA | CERCLA | CWA | CAA | SARA 313 | SARA 302 | Acute | Chronic | Fire | Reactivity | Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Potassium Nitrate | Yes | No | No | No | Yes | No | No | No | No | No | No |
| Sulfur | No | Yes | No | No | Yes | Yes | No | No | No | No | No |
| Charcoal | Yes | No | No | No | No | No | Not stated | Not stated | Not stated | Not stated | Not stated |
| Potassium Chlorate | Yes | No | No | No | No | No | Yes | No | Yes | No | No |
| Ethyl Alcohol | Yes | No | No | No | No | No | Yes | Yes | Yes | No | No |
| Acetone | Yes | 2270 kg | No | No | Yes | No | Yes | No | No | No | No |
| Red Phosphorus | Yes | 0.454 kg | No | No | No | 304-01 / 302-100 | Not stated | Not stated | Not stated | Not stated | Not stated |
| Cellulose Nitrate | Yes | 2270 kg | No | No | Yes | No | Not stated | Not stated | Not stated | Not stated | Not stated |
| Dextrin | Yes | 2270 kg | No | No | No | No | Yes | Yes | No | No | No |
| Orange Flake Shellac | Yes | 0.454 kg | No | No | No | No | Not stated | Not stated | Not stated | Not stated | Not stated |

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF LAST REVISION

Revision information : 01/10/2018

| | |
|---|---|
| NFPA rating : | |
| Flammability : | 3 |
| Health : | 2 |
| Reactivity : | 1 |
| HMIS rating : | |
| Flammability : | 1 |
| Health : | 3 |
| Physical Hazard : | 1 |