Safety Data Sheet

OPTIMIZED FOR YOUR TARGET™

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • **CR-10**

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

Relevant identified use(s) • Cleaning

1.3 Details of the supplier of the safety data sheet

Manufacturer • Barnes Bullets

PO Box 620
Mona, UT 84645
United States
www.barnesbullets.com
email@barnesbullets.com

Telephone (General) • (435) 856-1000

1.4 Emergency telephone number

Manufacturer • (435) 856-1000

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]

2.1 Classification of the substance or mixture

CLP • Oxidizing Liquids 3 - H272
Acute Toxicity Oral 4 - H302
Acute Toxicity Dermal 3 - H311
Skin Corrosion 1B - H314
Serious Eye Damage 1 - H318
Acute Toxicity Inhalation 3 - H331
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation - H335
Reproductive Toxicity 1B - H360D

2.2 Label Elements

CLP

DANGER

Hazard statements • H272 - May intensify fire; oxidizer
H302 - Harmful if swallowed

H311 - Toxic in contact with skin
H314 - Causes severe skin burns and eye damage.
H318 - Causes serious eye damage
H331 - Toxic if inhaled
H335 - May cause respiratory irritation
H360D - May damage the unborn child.

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.
  P220 - Keep/Store away from clothing and other combustible materials.
  P221 - Take any precaution to avoid mixing with combustibles
  P260 - Do not breathe mists, vapours, and/or spray.
  P264 - Wash thoroughly after handling.
  P270 - Do not eat, drink or smoke when using this product.
  P271 - Use only outdoors or in a well-ventilated area.
  P280 - Wear protective gloves/protective clothing/eye protection/face protection.
  P281 - Use personal protective equipment as required.

Response

- P370+P378 - In case of fire: Use appropriate media for extinction.
  P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  P311 - Call a POISON CENTER or doctor/physician.
  P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P310 - Immediately call a POISON CENTER or doctor/physician.
  P321 - Specific treatment, see supplemental first aid information.
  P363 - Wash contaminated clothing before reuse.
  P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P301+P312 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
  P330 - Rinse mouth.
  P331 - Do NOT induce vomiting.
  P308+P313 - IF exposed or concerned: Get medical advice/attention.

Storage/Disposal

- P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
  P405 - Store locked up.
  P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information

- This product consists of ingredients of unknown toxicity: 45% via oral route, 80-90% via inhalation route, 80-90% via dermal route.

2.3 Other Hazards

CLP

- According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012

- Oxidizing Liquids 3
  Acute Toxicity Oral 4
  Acute Toxicity Dermal 3
  Skin Irritation 2
  Serious Eye Damage 1
  Acute Toxicity Inhalation 3
  Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
  Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
  Reproductive Toxicity 1B
  Specific Target Organ Toxicity Repeated Exposure 2

2.2 Label elements

OSHA HCS 2012

DANGER

Hazard statements

- May intensify fire; oxidizer
  Harmful if swallowed
  Toxic in contact with skin
  Causes skin irritation
  Causes serious eye damage
  Toxic if inhaled
  May cause respiratory irritation
  May cause drowsiness or dizziness
  May damage fertility or the unborn child.
  May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

- Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Keep away from heat.
  Keep/Store away from clothing and other combustible materials.
  Take any precaution to avoid mixing with combustibles
  Do not breathe mists, vapours, and/or spray.
  Wash thoroughly after handling.
  Do not eat, drink or smoke when using this product.
  Use only outdoors or in a well-ventilated area.
  Wear protective gloves/protective clothing/eye protection/face protection.

Response

- In case of fire: Use appropriate media for extinction.
  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  Call a POISON CENTER or doctor/physician.
  If on skin: Wash with plenty of water .
  Specific treatment, see supplemental first aid information.
  Take off immediately all contaminated clothing and wash it before reuse.
  If skin irritation occurs: Get medical advice/attention.
  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  Immediately call a POISON CENTER or doctor/physician.
  IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician if you feel unwell.
  Rinse mouth.
  IF exposed or concerned: Get medical advice/attention.
  Get medical advice/attention if you feel unwell.

Storage/Disposal

- Store in a well-ventilated place. Keep container tightly closed.
  Store locked up.
  Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information

- This product consists of ingredients of unknown toxicity: 45% via oral route, 80-90% via inhalation route, 80-90% via dermal route.

2.3 Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to: WHMIS

2.1 Classification of the substance or mixture

WHMIS

- Oxidizing - C
  Toxic - D1B

Other Toxic Effects - D2A
Corrosive - E

2.2 Label elements

WHMIS

- Oxidizing - C
  Toxic - D1B
  Other Toxic Effects - D2A
  Corrosive - E

2.3 Other hazards

WHMIS

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance.

3.2 Mixtures

Composition					
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
Proprietary Blend	NDA	0% TO 100%	NDA	**EU CLP:** Not Classified **OSHA HCS 2012:** Not Classified	NDA
Ethylene glycol monobutyl ether	**CAS:**111-76-2 **EC Number:**203-905-0 **EU Index:**603-014-00-0	10% TO 20%	Inhalation-Rat LC50 • 450 ppm 4 Hour(s) Skin-Rabbit LD50 • 220 mg/kg Ingestion/Oral-Rat LD50 • 250 mg/kg	**EU CLP:** Annex VI, Table 3.1: Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Skin Irrit. 2, H315; Eye Irrit. 2, H319 **OSHA HCS 2012:** Flam. Liq. 4; Acute Tox. 3 (Orl); Acute Tox. 3 (Skn); Acute Tox. 3 (Inhl); Eye Irrit. 2; Repr. 2; STOT SE 3: Narc.; STOT SE 3: Resp. Irrit. (Orl); STOT RE 2 (Blood, Inhl, Orl, Skn)	NDA
Sodium nitrate	**CAS:**7631-99-4 **EC Number:**231-554-3	10% TO 15%	Ingestion/Oral-Rat LD50 • 1267 mg/kg	**EU CLP:** Skin Irrit. 2, H315; Eye Irrit. 2, H319; Acute Tox. 4, H302; Ox. Sol. 3, H272 **OSHA HCS 2012:** Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3: Resp. Irrit.; Acute Tox. 4 (Orl); Ox. Sol. 3	NDA
Ammonium hydroxide	**CAS:**1336-21-6 **EC Number:**215-647-6 **EU Index:**007-001-01-2	5% TO 10%	Ingestion/Oral-Rat LD50 • 350 mg/kg	**EU CLP:** Annex VI, Table 3.1: Skin Corr. 1B, H314; Aquatic Acute 1, H400 **OSHA HCS 2012:** Acute Tox. 3 (Orl); Eye Dam. 1; Skin Corr. 1C; STOT SE 3: Resp. Irrit.	NDA
2-Pyrrolidinone, 1-methyl-	**CAS:**872-50-4 **EC Number:**212-828-1 **EU Index:**606-021-00-7	5% TO 10%	Ingestion/Oral-Rat LD50 • 3914 mg/kg Skin-Rabbit LD50 • 8 g/kg	**EU CLP:** Annex VI, Table 3.1: Repr. 1B, H360D ***; Eye Irrit. 2, H319; STOT SE 3: Resp. Irrit., H335; Skin Irrit. 2, H315 **OSHA HCS 2012:** Eye Irrit. 2; Repr. 1B; Skin Irrit. 2; Skin Sens. 1	NDA

See Section 16 for full text of H-statements.

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation
- Move victim to fresh air. Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing. Get medical attention immediately.

Skin
- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing. Get medical attention immediately.

Eye
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. Get medical attention immediately.

Ingestion
- If swallowed, rinse mouth with water.(only if the person is conscious). Do NOT induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media
- SMALL FIRES: Use water.
  SMALL FIRES: CO2 or Halon® may provide limited control.
  LARGE FIRE: Flood fire area with water from a distance.

Unsuitable Extinguishing Media
- SMALL FIRES: Do not use dry chemicals or foams.

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- Containers may explode when heated.
  May explode from heat or contamination.
  May ignite combustibles (wood, paper, oil, clothing, etc.)
  Runoff may create fire or explosion hazard.
  Some may decompose explosively when heated or involved in a fire.
  Some will react explosively with hydrocarbons (fuels)
  These substances will accelerate burning when involved in a fire.

Hazardous Combustion Products
- This product is not defined as flammable or combustible; however, under fire conditions it may support combustion and produce toxic oxides of carbon and various hydrocarbons.

5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
  Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
  Wear positive pressure self-contained breathing apparatus (SCBA).
  Move containers from fire area if you can do it without risk.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Ventilate enclosed areas. Do not walk through spilled material. Avoid contact with skin, eyes or clothing. Wear a self-contained breathing apparatus and appropriate Personal Protective Equipment (PPE) Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Contaminated clothing may be a fire risk when dry.

Emergency Procedures

- LARGE SPILL: Consider initial downwind evacuation for at least 100 meters (330 feet) As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep combustibles (wood, paper, oil, etc.) away from spilled material. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

6.2 Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures

- LARGE SPILLS: Dike far ahead of liquid spill for later disposal.
  LARGE SPILLS: Following product recovery, flush area with water.
  SMALL LIQUID SPILLS: Use a non-combustible material like vermiculite or sand to soak up the product and place into a container for later disposal.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling

- Handle and open container with care. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. Do not breathe mist, vapours, and/or spray. Do not get in eyes, on skin, or on clothing. Wear appropriate personal protective equipment, avoid direct contact. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Keep container tightly closed. Store in a cool, dry, well-ventilated place.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines				
	Result	**ACGIH**	**NIOSH**	**OSHA**
Ethylene glycol monobutyl ether (111-76-2)	TWAs	20 ppm TWA	5 ppm TWA; 24 mg/m3 TWA	50 ppm TWA; 240 mg/m3 TWA

8.2 Exposure controls

Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable

level. Use explosion-proof electrical/ventilating/lighting/equipment.

Personal Protective Equipment

Respiratory	• In case of insufficient ventilation, wear suitable respiratory equipment.
Eye/Face	• Wear chemical splash safety goggles.
Skin/Body	• Wear appropriate gloves. Wear long sleeves and/or protective coveralls.
Environmental Exposure Controls	• Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Light yellow to dark amber liquid with strong ammonia odor.
Color	Light yellow to dark amber.	Odor	Strong ammonia.
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	= 1.1 Water=1	Water Solubility	Soluble 100 %
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	> 200 F(> 93.3333 C)	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Exposure to high temperatures.

10.5 Incompatible materials

- Strong oxidizing agents.

10.6 Hazardous decomposition products

- Toxic oxides of carbon and hydrocarbons.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Ethylene glycol monobutyl ether (10% TO 20%)	111-76-2	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 250 mg/kg; Ingestion/Oral-Man TDLo • 132 mg/kg; *Behavioral*:**Sleep**; *Kidney, Ureter, and Bladder*:**Hematuria**; *Nutritional and Gross Metabolic:Changes in Chemistry or Temperature*:**Metabolic acidosis**; Inhalation-Rat LC50 • 450 ppm 4 Hour(s); *Behavioral*:**Ataxia**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; Skin-Rabbit LD50 • 220 mg/kg; **Irritation:** Eye-Rabbit • 100 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 500 mg-Open • Mild irritation; **Multi-dose Toxicity:** Inhalation-Monkey TCLo • 500 mg/m³ 7 Hour(s) 12 Week(s)-Intermittent; *Blood*:**Normocytic anemia**; *Blood*:**Changes in serum composition (e.g., TP, bilirubin cholesterol)**; Inhalation-Rat TCLo • 10 mg/m³ 90 Day(s)-Continuous; *Endocrine*:**Hypoglycemia**; *Blood*:**Normocytic anemia**; *Nutritional and Gross Metabolic:Gross Metabolite Changes*:**Weight loss or decreased weight gain**; Inhalation-Rat TCLo • 10 mg/m³ 24 Hour(s) 13 Week(s)-Continuous; *Endocrine*:**Hypoglycemia**; *Blood*:**Changes in erythrocyte (RBC) count**; *Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels*:**Transaminases**; Skin-Rabbit TDLo • 4500 µL/kg 9 Day(s)-Intermittent; *Liver*:**Changes in liver weight**; *Blood*:**Pigmented or nucleated red blood cells**; *Blood*:**Changes in erythrocyte (RBC) count**; **Reproductive:** Ingestion/Oral-Rat TDLo • 600 mg/kg (9-11D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetal death**; Inhalation-Rabbit TCLo • 100 ppm 6 Hour(s)(6-18D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Cardiovascular (circulatory) system**; Inhalation-Rabbit TCLo • 483 mg/m³ (6H/6-15D preg); *Reproductive Effects:Effects on Fertility*:**Pre-implantation mortality**; *Reproductive Effects:Effects on Fertility*:**Post-implantation mortality**; *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; **Tumorigen / Carcinogen:** Inhalation-Mouse TCLo • 250 ppm 6 Hour(s) 2 Year(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Liver*:**Tumors**; Inhalation-Rat TCLo • 125 ppm 6 Hour(s) 2 Year(s)-Intermittent; *Tumorigenic*:**Equivocal tumorigenic agent by RTECS criteria**; *Endocrine*:**Tumors**
Ammonium hydroxide (5% TO 10%)	1336-21-6	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 350 mg/kg; *Gastrointestinal*:**Other changes**; *Liver*:**Other changes**; *Kidney, Ureter, and Bladder*:**Other changes**; **Irritation:** Eye-Rabbit • 44 µg • Severe irritation
Sodium nitrate (10% TO 15%)	7631-99-4	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 1267 mg/kg; **Tumorigen / Carcinogen:** Ingestion/Oral-Rat TDLo • 100 g/kg 2 Year(s)-Continuous; *Tumorigenic*:**Equivocal tumorigenic agent by RTECS criteria**; *Liver*:**Tumors**
2-Pyrrolidinone, 1-methyl- (5% TO 10%)	872-50-4	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 3914 mg/kg; **Irritation:** Eye-Rabbit • 100 mg • Moderate irritation; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 33750 mg/kg 90 Day(s)-Intermittent; *Behavioral*:**Muscle weakness**; Inhalation-Rat TCLo • 400 mg/m³ 6 Hour(s) 4 Week(s)-Intermittent; *Lungs, Thorax, or Respiration*:**Acute pulmonary edema**; *Blood*:**Changes in leucocyte (WBC) count**; *Related to Chronic Data*:**Death in the Other Multiple Dose data type field**; **Reproductive:** Ingestion/Oral-Rat TDLo • 7.5 g/kg (6-20D preg); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Specific Developmental Abnormalities*:**Musculoskeletal system**; Ingestion/Oral-Rat TDLo • 11.25 g/kg (6-20D preg); *Reproductive Effects:Specific Developmental Abnormalities*:**Craniofacial (including nose and tongue)**; **Tumorigen / Carcinogen:** Ingestion/Oral-Mouse TDLo • 784 g/kg 78 Week(s)-Continuous; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Liver*:**Tumors**

GHS Properties	Classification
Respiratory sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Serious eye damage/Irritation	**EU/CLP** • Serious Eye Damage 1 **OSHA HCS 2012** • Serious Eye Damage 1
Acute toxicity	**EU/CLP** • Acute Toxicity - Dermal 3 - ATEmix(dermal) = 220 mg/kg; Acute Toxicity - Inhalation 3 - ATEmix(inhl, vapors) = 450 ppm; Acute Toxicity - Oral 4 - ATEmix(oral) = 745.83 mg/kg **OSHA HCS 2012** • Acute Toxicity - Dermal 3 - ATEmix(dermal) = 220 mg/kg; Acute Toxicity - Inhalation 3 - ATEmix(inhl) = 450 ppm; Acute Toxicity - Oral 4 - ATEmix(oral) = 720.85 mg/k
Aspiration Hazard	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Carcinogenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
Skin corrosion/Irritation	**EU/CLP** • Skin Corrosion 1B **OSHA HCS 2012** • Skin Irritation 2
Skin sensitization	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking
STOT-RE	**EU/CLP** • Data lacking **OSHA HCS 2012** • Specific Target Organ Toxicity Repeated Exposure 2
STOT-SE	**EU/CLP** • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation **OSHA HCS 2012** • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects; Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Toxicity for Reproduction	**EU/CLP** • Toxic to Reproduction 1B **OSHA HCS 2012** • Toxic to Reproduction 1B
Germ Cell Mutagenicity	**EU/CLP** • Data lacking **OSHA HCS 2012** • Data lacking

Potential Health Effects

Inhalation

Acute (Immediate)
- Toxic if inhaled. May cause corrosive burns - irreversible damage. May cause respiratory irritation. May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin

Acute (Immediate)
- Toxic in contact with skin. Causes severe skin burns and eye damage.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

Acute (Immediate)
- Causes serious eye damage.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

Acute (Immediate)
- Harmful if swallowed. May cause irreversible damage to mucous membranes.

Chronic (Delayed)
- Repeated or prolonged exposure to corrosive materials or fumes may cause

gastrointestinal distrubances.

Other

Chronic (Delayed)
- Repeated and prolonged exposure may affect the blood and/or immune system.

Reproductive Effects
- Repeated and prolonged exposure may cause reproductive effects.

Key to abbreviations
LC = Lethal Concentration
LD = Lethal Dose
TC = Toxic Concentration
TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity
- Material data lacking.

12.2 Persistence and degradability
- Material data lacking.

12.3 Bioaccumulative potential
- Material data lacking.

12.4 Mobility in Soil
- Material data lacking.

12.5 Results of PBT and vPvB assessment
- PBT and vPvB assessment has not been conducted.

12.6 Other adverse effects
- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods
Product waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste
- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	NDA	Not Regulated	NDA	NDA	NDA
TDG	NDA	Not Regulated	NDA	NDA	NDA
IMO/IMDG	UN3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Ammonium hydroxide)	9	III	NDA

IATA/ICAO	UN3082	Environmentally hazardous substance, liquid, n.o.s. (Ammonium hydroxide)	9	III	NDA

14.6 Special precautions for user
- None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Data lacking.

Section 15 - Regulatory Information

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

SARA Hazard Classifications
- Acute, Chronic, Fire

Inventory						
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**EU EINECS**	**EU ELNICS**	**TSCA**
2-Pyrrolidinone, 1-methyl-	872-50-4	Yes	No	Yes	No	Yes
Ammonium hydroxide	1336-21-6	Yes	No	Yes	No	Yes
Ethylene glycol monobutyl ether	111-76-2	Yes	No	Yes	No	Yes
Sodium nitrate	7631-99-4	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Ethylene glycol monobutyl ether	111-76-2	B3, D1A, D2B
• Ammonium hydroxide	1336-21-6	E
• Sodium nitrate	7631-99-4	C, D2B
• 2-Pyrrolidinone, 1-methyl-	872-50-4	B3, D2B

Canada - WHMIS - Ingredient Disclosure List

• Ethylene glycol monobutyl ether	111-76-2	1 %
• Ammonium hydroxide	1336-21-6	1 %
• Sodium nitrate	7631-99-4	1 %
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Ethylene glycol monobutyl ether	111-76-2	Priority Substance List 2 (substance considered toxic, added to CEPA's Schedule 1, List of Toxic Substances)
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	1000 lb final RQ; 454 kg final RQ
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	1.0 % de minimis concentration

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed

• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	developmental toxicity, initial date 6/15/01

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	3200 µg/day MADL (inhalation); 17000 µg/day MADL (dermal)

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Ethylene glycol monobutyl ether	111-76-2	Not Listed
• Ammonium hydroxide	1336-21-6	Not Listed
• Sodium nitrate	7631-99-4	Not Listed
• 2-Pyrrolidinone, 1-methyl-	872-50-4	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

15.3 Other Information

- WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H301 - Toxic if swallowed
  H315 - Causes skin irritation
  H319 - Causes serious eye irritation
  H400 - Very toxic to aquatic life

Revision Date

- 10/November/2015

Preparation Date

- 30/January/2015

Disclaimer/Statement of Liability

- The information herein is given in good faith but no warranty, expressed or implied, is made.

Key to abbreviations

NDA = No Data Available