J.B.CHEMICAL CO., INC.

SAFETY DATA SHEET Spoke & Wire Wheel Cleaner

SDS No: 4029-1
Version: 1.1 (REG_29 CFR 1910.1200 /REG_GHS Rev.5th e.2013)
Date of last Revision: 08/19/2014

1.Identification of the substance or mixture and of the supplier

1.1 Product identifier used on the label: Spoke & Wire Wheel Cleaner
1.2 Other means of identification: Not Applicable
1.3 Recommended use of the chemical and restrictions on use: A heavy duty acid-based cleaner for chrome and wire wheels. This material should not be used for any other purpose than that recommended without expert advice.
1.4 Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:
J.B.Chemical Co., Inc.
14803 S. Spring Street
Gardena, CA 90248, USA
310-532-3021
800-522-2468
1.5 Emergency phone numbers:
J.B.Chemical Co., Inc.: (310) 532-3021, (800) 522-2468 Monday - Friday, 7:00am - 3:00pm PST
Chemtrec: (800) 424-9300 - Outside the continental U.S.: (703) 527-3887 24 Hours

2.Hazard(s) identification

2.1 Classification of the chemical in accordance with 29 CFR 1910.1200(d) and GHS Rev.5th e.2013:
This product is classified as hazardous.

Acute Toxicity(Oral) Category 2
Acute Toxicity(Dermal) Category 2
Acute Toxicity(Inhalation) Category 2
Eye Damage Category 1
Skin Corrosion Category 1
Carcinogenicity Category 1A
Corrosive to Metals Category 1

2.2 Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with 29 CFR 1910.1200(f) and GHS Rev.5th e.2013:

Signal word: Danger

Hazard statement(s):

- **Physical Hazards:** H290: May be corrosive to metals.
- **Health Hazards:** H314: Causes severe skin burns and eye damage.
  H330: Fatal if inhaled.
  H310: Fatal in contact with skin.
  H300: Fatal if swallowed.
  H350: May cause cancer.
- **Environmental Hazard:** Not Determined.

Symbol(s):

Precautionary statement(s):
Prevention:
P102: Keep out of reach of children.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P234: Keep only in original container.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P262: Do not get in eyes, on skin, or on clothing.
P264: Wash hands 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.
P273: Avoid release to the environment.
P284: [In case of inadequate ventilation] Wear respiratory protection.
Response:
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310: Immediately call a POISON CENTER or doctor/physician.
P320: Specific treatment is urgent (see First- aid measures on this label).
P363: Wash contaminated clothing before reuse.
P390: Absorb spillage to prevent material damage.
Storage:
P405: Store locked up.
P406: Store in corrosive resistant/container with a resistant inner liner.
P403+ P233: Store in a well-ventilated place. Keep container tightly closed.
Disposal: P501: Dispose of contents/container in accordance with CERCLA/CWA (Section 311)/SARA Title III Regulations.

2.3 Describe any hazards not otherwise classified that have been identified during the classification process

2.4 Where an ingredient with unknown acute toxicity is used in a mixture at a concentration ≥ 1% and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required: Not Applicable

3.Composition/ information on ingredients

Chemical name	CAS No.	EC No.	Concentration (Wt%)	Classification 29 CFR 1910.1200(d)/GHS
Ethylene glycol monobutyl ether	111-76-2	203-905-0	≤ 2.00	Flam. Liq.4 H227 Acute Tox.4 H302 Acute Tox.4 H312 Skin Irrit.2 H315 Eye Irrit.2 H319 Acute Tox.4 H332 Asp Tox.1 H304
Hydrofluoric acid	7664-39-3	231-634-8	≤ 7.00	Acute Tox.2 H330 Acute Tox.1 H300 Acute Tox.2 H310 Eye Dam.1 H318 Skin Corr.1A H314 Met Corr.1 H290
Sulfuric Acid	7664-93-9	231-639-5	≤ 27.00	Acute Tox.2 H330 Eye Dam.1 H318 Skin Corr.1A H314 Carc.1A H350 Aquatic Acute 3 H402 Met Corr.1 H290
Phosphoric Acid	7664-38-2	231-633-2	≤ 5.00	Acute Tox.4 H312 Acute Tox.4 H302 Skin Corr.1B H314 Eye Dam.1 H318 STOT SE3 H335 Met Corr.1 H290
Nonylphenol polyethylene glycol ether	127087-87-0	500-315-8	≤ 2.00	Acute Tox.4 H302 Acute Tox.3 H311 Eye Irrit.2 H319 Aquatic Chronic 2 H411

4.First-aid measures

4.1 Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion.

General advice: Move out of dangerous area. Consult a physician.
Show this safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.

- **Inhalation:** If respiratory symptoms develop, move victim away from source of exposure and into fresh air. Call a physician or poison control center immediately. If unconscious place in recovery position and seek medical advice.
- **Skin contact:** Remove immediately contaminated clothing, including shoes, and launder before reuse or discard. Immediately flush contaminated skin with large quantities of cool running water for 5 minutes. Remove contaminated clothing while flushing contaminated skin. Immediately after washing, apply 2.5% calcium gluconate gel to all affected skin areas. (Note: If gel is not prepared within 5 minutes, continue flushing until gel is prepared.) The gel should be massaged into the affected skin by personnel wearing gloves to prevent skin contamination during first aid. Gel should be applied every 15 minutes and massaged continuously. Instead of calcium gluconate treatment, the affected areas may be soaked in iced 0.13% benzalkonium chloride solution (Zephiran chloride). Use ice cubes rather than shaved ice to prevent frostbite. If it is not practical to immerse affected area, towels should be soaked with iced 0.13% benzalkonium chloride solution and used as compresses for the burned area. Compresses should be changed every 2-3 minutes and continued until pain is relieved or victim is seen by a physician. If neither calcium gluconate nor benzalkonium chloride is available, use an iced saturated water solution of magnesium sulfate (Epsom salts), or if that is not available, iced 70% alcohol or ice water. Local anesthetics should be avoided since relief of pain indicates success of the treatment. Get medical attention as soon as possible. **NOTE**: Calcium gluconate gel can be prepared by mixing a 10 milliliter ampule of calcium gluconate with a 2-ounce tube of K-Y jelly (Johnson & Johnson). After a jar of this mixture has been opened and used, it should be discarded to prevent bacterial or chemical contamination.
- **Eye contact:** In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye.
- **Ingestion:** Rinse mouth with water. Do not induce vomiting or give anything by mouth. If victim is drowsy or unconscious, place on the left side with head down. Do not leave victim unattended. Get medical attention immediately.

4.2 **Most important symptoms/effects, acute and delayed:** Serious eye and skin burns/irritation. This product contains **Hydrofluoric acid (HF), Sulfuric acid (H2SO4) and Phosphoric acid (H3PO4)**. Acute local effects from HF exposure are concentration-dependent. If untreated or exposure is prolonged, even dilute solutions of HF can cause delayed toxicity following penetration to subcutaneous tissue. Acute systemic toxicity is largely dependent upon the total amount of fluoride ion absorbed.
Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, and diarrhea), irritation (nose, throat, and airways), cough, choking, headache, bloody urine, lung edema (fluid buildup in the lung tissue) and difficulty in breathing.

4.3 **Indication of immediate medical attention and special treatment needed, if necessary:** Serious eye and skin burns/irritation.(See section 4:1 and 4:2)

5.Fire-fighting measures

5.1 **Suitable (and unsuitable) extinguishing media:** Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not discharge extinguishing waters into the aquatic environment.

5.2 **Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):** Reacts with most metals, to give flammable, potentially explosive hydrogen gas. Corrosive vapors, sulfur oxides, toxic fumes, acid vapors, hydrogen fluoride, carbon dioxide and carbon monoxide, aldehydes, ketones and organic acids might result from combustion and evaporation of the product.

5.3 **Special protective equipment and precautions for fire-fighters:** Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Runoff from fire control may cause pollution. Neutralize run-off with lime,

soda ash, etc., to prevent corrosion of metals and formation of hydrogen gas. Wear full protective clothing and self-contained breathing apparatus.

6.Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures:
Avoid contact with spilled or released material. Immediately remove all contaminated clothing. Wear protective equipment and self-contained breathing apparatus to prevent skin and eye contact and breathing in vapors. Remove all possible sources of ignition in the surrounding area. Shut off leaks, if possible without personal risks. Use appropriate containment (of product and fire- fighting water) to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapor or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

6.2 Methods and materials for containment and cleaning up:
Use appropriate protective equipment during clean up. Cautiously dilute and neutralize with lime or soda ash then soak up small spills with dry sand, clay, or diatomaceous earth. Dike large spills, and cautiously dilute and neutralize with lime or soda ash, and transfer to waste water treatment system. Prevent liquid from entering sewers, waterways, or low areas. Remove contaminated soil and dispose of safely.
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Centre at (800) 424-8802.

7.Handeling and storage

7.1 Precautions for safe handling:
Avoid breathing mists or vapors. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Handle an open container with care in a well-ventilated area. Ventilate work place in such a way that the Occupational Exposure Limit (OEL) is not exceeded. Do not empty into drains.

7.2 Conditions for safe storage, including any incompatibilities:
For small containers, keep out of reach of children. Keep tightly closed and store in a cool and well ventilated area. Store only in approved containers and protect from physical damage. Storage should meet OSHA standards. Empty drums should be completely drained, properly bunged, and promptly shipped to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulation. Keep away from heat.

8.Exposure controls/ personal protection

8.1 OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available:
Component(s):

Chemical name	Type	Exposure Limit values	Source
Hydrofluoric acid CAS No: 7664-39-3	TWA (fume,8 hr)	0.5ppm	US. ACGIH Threshold Limit Values (01 2010)
Ethylene glycol monobutyl ether CAS No: 111-76-2	TWA (vapor,8 hr)	20 ppm	US. ACGIH Threshold Limit Values (01 2010)
Sulfuric Acid CAS No: 7664-93-9	TWA (fume,8 hr)	0.2 mg/m3	US. ACGIH Threshold Limit Values (01 2010)
Phosphoric Acid CAS No:7664-38-2	TWA (fume,8 hr)	1 mg/m3	US. ACGIH Threshold Limit Values (01 2010)

8.2 Appropriate engineering controls: Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.3 Individual protection measures, such as personal protective equipment:

- **Eye/face protection:** Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended: Chemical splash proof goggles and face shield. Maintain an eye wash station in immediate work area.

- **Skin/hand protection:** Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Gloves made from the following material(s) are recommended: acid-proof gauntlet gloves, apron, and boots; long sleeve wool, acrylic, or polyester clothing; acid proof suit and hood. Maintain a safety shower near work area.

- **Respiratory protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use and maintenance must be in accordance with regulatory requirements. If applicable, types of respirators to be considered for this material include: Use NIOSH approved respiratory protection. In the case of dust or aerosol formation, use respirator with an approved filter and with a full face mask. Self-contained breathing apparatus in confined spaces/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.

9.Physical and chemical properties

Appearance (physical state, color, etc.):	Liquid, clear
Odor:	Characteristic
Odor threshold:	Not Determined
pH:	<1.00
Melting point/freezing point:	Not Applicable
Initial boiling point and boiling range:	>200 °F
Flash point:	Not Applicable

Evaporation rate:	Not Determined
Flammability (solid, gas):	Not Applicable
Upper/lower flammability or explosive limits:	Not Applicable
Vapor pressure:	Not Determined
Vapor density:	Not Determined
Relative density:	1.20 at 77°F (Water=1)
Solubility(ies):	Soluble
Partition coefficient: n-octanol/water:	Not Determined
Auto-ignition temperature:	Not Determined
Decomposition temperature:	Not Determined
Viscosity:	Not Determined

10.Stability and reactivity

10.1 **Reactivity:** This material will react with incompatible materials but is considered to be stable under normal use conditions and will not undergo decomposition if stored and applied as directed.
10.2 **Chemical stability:** Stable.
10.3 **Possibility of hazardous reactions:** Hazardous polymerization will not occur.
10.4 **Conditions to avoid (e.g., static discharge, shock, or vibration):** Incompatible materials, excess heat, combustible or flammable materials.
10.5 **Incompatible materials:** Metals, alkali, amines, alcohols, some organic acids, some ethers, salts and most organic compounds.
10.6 **Hazardous decomposition products:** A complex mixture of toxic airborne solids, liquids and gases, including hydrogen fluoride, sulfur oxides, carbon oxides, hydrogen gas, acid vapors and other organic compounds will be evolved when this material undergoes combustion, thermal or oxidative degradation and other chemical reactions.

11.Toxicological information

Description of the various toxicological (health) effects and the available data used to identify those effects, including:

11.1 **Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):**

- **Inhalation:** Fatal if inhaled. Extremely hazardous in case of inhalation (lung corrosive). Possibility of irritation of nose, throat, and lungs with cough, difficulty breathing or shortness of breath. Pulmonary edema with cough, wheezing, abnormal lung sounds, possibly progressing to severe shortness of breath and bluish discoloration of the skin. Symptoms may be delayed. Repeated or prolonged exposure to mists may cause corrosion of teeth. Do not breathe dust/fume/gas/mist/vapors/spray.
- **Ingestion:** Fatal if ingested. Causes burns and gastrointestinal irritation with nausea, vomiting and diarrhea. Burns of the mouth, throat, esophagus and stomach, with severe pain, bleeding, vomiting, diarrhea and collapse of blood pressure. Damage may appear days after exposure.
- **Skin contact:** Fatal in contact with skin. Extremely hazardous in case of skin contact (corrosive, irritant and permeator).Causes severe skin burns. Even solutions containing 2% or less hydrogen fluoride or other inorganic fluoride compounds can cause burns and tissue damage.
- **Eye contact:** Causes serious or permanent eye damage and blindness.

11.2 **Symptoms related to the physical, chemical and toxicological characteristics:** See Sections 4.2 and 11.3

11.3 Delayed and immediate effects and also chronic effects from short- and long-term exposure: Inhalation: Prolonged or repeated inhalation may affect behavior (muscle contraction or spasticity), urinary system (kidney damage), and cardiovascular system, heart (ischemic heart lesions), and respiratory system/lungs (pulmonary edema, lung damage), teeth (dental discoloration, erosion).
Skin: Prolonged or repeated skin contact may cause dermatitis, an allergic skin reaction.

11.4 Numerical measures of toxicity (such as acute toxicity estimates): Not determined on the mixture.

Acute toxicity

Name (Components)	Route	Species	Value
Hydrogen Fluoride CAS No: 7664-39-3	Dermal (in form of sodium fluoride)	Mouse	LD10>300 mg/kg
"	Ingestion, 2% solution	Guinea pig	LD100>80 mg/kg
"	Inhalation (gas,1 hours)	Rat	LC50>850-1070 ppm
Ethylene glycol monobutyl ether CAS No:111-76-2	Dermal	Rat	LD50 > 2000 mg/kg
"	Ingestion	Rat	LD50 > 1300 mg/kg
"	Inhalation-vapor (3 hours)	Rat	LC50 > 4.9 mg/l
Sulfuric Acid CAS No:7664-93-9	Dermal		No Data Available
"	Ingestion	Rat	LD50 >2140 mg/kg
"	Inhalation(2 hours)	Rat	LC50 >510 mg/m3
Nonylphenol polyethylene glycol ether CAS No:127087-87-0	Dermal	Rabbit	LD50>1000 mg/kg
"	Ingestion	Rat	LD50>500 mg/kg
"	Inhalation-aerosol (4 hours)	Rat	LD50>1.15 mg/l
Phosphoric Acid CAS No:7664-38-2	Dermal	Rabbit	LD50 >2740 mg/kg
"	Ingestion	Rat	LD50 >1530 mg/kg
"	Inhalation (4 hours)		No Data Available

Skin Corrosion/Irritation

Name (Components)	Species	Value
Hydrogen Fluoride CAS No: 7664-39-3	Rabbit	Corrosive to skin.
Ethylene glycol monobutyl ether CAS No:111-76-2	Rabbit (24 hours)	Moderate irritation
Sulfuric Acid CAS Mo:7664-93-9	Human	Corrosive to skin.
Nonylphenol polyethylene glycol ether CAS No:127087-87-0		Prolonged contact may cause slight irritation with local redness.

Phosphoric Acid CAS No:7664-38-2		Corrosive to skin.

Serious Eye Damage/Irritation

Name (Components)	Species	Value
Hydrogen Fluoride CAS No: 7664-39-3	Rabbit	Corrosive to eyes.
Ethylene glycol monobutyl ether CAS No:111-76-2	Rabbit (24 hours)	Moderate irritation
Sulfuric Acid CAS No:7664-93-9		Corrosive to eyes.
Nonylphenol polyethylene glycol ether CAS No:127087-87-0		Causes severe eye irritation. May cause severe corneal injury.
Phosphoric Acid CAS No:7664-38-2		Corrosive to eyes.

Respiratory or skin sensitization

Name (Components)	Species	Value
Hydrogen Fluoride CAS No: 7664-39-3		No relevant data found.
Ethylene glycol monobutyl ether CAS No:111-76-2	Guinea Pig	Not a skin sensitizer
Sulfuric Acid CAS No:7664-93-9	Human	No relevant data found.
Nonylphenol polyethylene glycol ether CAS No:127087-87-0	Human	Not a sensitizer
Phosphoric Acid CAS No:7664-38-2		No relevant data found.

Germ Cell Mutagenicity

Name (Components)	Route	Value
Hydrogen Fluoride CAS No: 7664-39-3	In Vivo	No relevant data found.
"	In Vitro	No relevant data found.
Ethylene glycol monobutyl ether CAS No:111-76-2	In Vitro: Salmonella typhimurium assay (Ames test)	Negative +/- activation
Sulfuric Acid CAS No:7664-93-9	In Vitro	No relevant data found.
Nonylphenol polyethylene glycol ether CAS No:127087-87-0	In Vitro	Not mutagenic
Phosphoric Acid CAS No:7664-38-2		No relevant data found.

Carcinogenicity

Name (Components)	Route	Species	Value
Hydrogen Fluoride CAS No: 7664-39-3			Not classified by IARC/ ACGIH
Ethylene glycol monobutyl ether CAS No:111-76-2			Not Classified.
Sulfuric Acid CAS No:7664-93-9			Classified As A2 by ACGIH and Group 1 by IARC
Nonylphenol polyethylene glycol ether CAS No:127087-87-0			Did not cause cancer in lab animals.
Phosphoric Acid CAS No:7664-38-2			No relevant data found.

Reproductive toxicity

Name (Components)	Route	Species	Value	Test Result	Exposure Duration
Hydrogen Fluoride CAS No: 7664-39-3				No relevant data found.	
Ethylene glycol monobutyl ether CAS No:111-76-2			Not Classified		
Sulfuric Acid CAS No:7664-93-9			No relevant data found.		
Nonylphenol polyethylene glycol ether CAS No:127087-87-0			No relevant data found.		
Phosphoric Acid CAS No:7664-38-2			No relevant data found.		

Specific Target Organ Toxicity - single exposure

Name (components)	Route	Species	Target Organ	Value	Test Result	Exposure Duration
Hydrogen Fluoride CAS No: 7664-39-3	Inhalation				Damage of respiratory tract, bronchitis, pneumonia, pulmonary edema.	
Ethylene glycol monobutyl ether CAS No:111-76-2	Inhalation		Central Nervous System	May cause drowsiness or dizziness	NOAEL	
Sulfuric Acid CAS No:7664-93-9				No relevant data found.		
Nonylphenol polyethylene glycol ether CAS No:127087-87-0				No relevant data found.		

Phosphoric Acid CAS No:7664-38-2				No relevant data found.		

Specific Target Organ Toxicity - repeated exposure

Name (components)	Route	Species	Target Organ	Value	Test Result	Exposure Duration
Hydrogen Fluoride CAS No: 7664-39-3				No relevant data found.	Liver and kidney injuries may occur. Also dental or skeletal fluorosis.	
Ethylene glycol monobutyl ether CAS No:111-76-2	Dermal	Rat		150 mg/kg	NOAEL	
Sulfuric Acid CAS No:7664-93-9				No relevant data found.		
Nonylphenol polyethylene glycol ether CAS No:127087-87-0		Animals	Kidney Liver		Positive	
Phosphoric Acid CAS No:7664-38-2				No relevant data found.		

Aspiration Hazard

Name (Components)	Value
Hydrogen Fluoride CAS No: 7664-39-3	No relevant data found.
Ethylene glycol monobutyl ether CAS No:111-76-2	Aspiration Hazard Toxicity Category 1
Sulfuric Acid CAS No:7664-93-9	No relevant data found.
Nonylphenol polyethylene glycol ether CAS No:127087-87-0	Not likely to be an aspiration hazard.
Phosphoric Acid CAS No:7664-38-2	No relevant data found.

12.Ecological information

12.1 Ecotoxicity (aquatic and terrestrial, where available): Not determined
12.2 Persistence and degradability: Not determined
12.3 Bioaccumulative potential: Not determined
12.4 Mobility in soil: Not determined
12.5 Other adverse effects (such as hazardous to the ozone layer): Not determined

13.Disposal considerations

13.1 Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging: Dispose of contents/ container in accordance with the local/regional/national/international regulations. Do not contaminate any lakes, streams, ponds, or underground water supplies.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death.

14.Transport information

Because this product is produced and shipped in several different container sizes, domestically and internationally, please consult your transportation specialist for the proper shipping name and class.

14.1 UN number: 2922
14.2 UN proper shipping name: Corrosive liquids, toxic, n.o.s., (Sulfuric acid, Hydrofluoric acid, Phosphoric acid)
14.3 Transport hazard class(es): 8 (6.1)
14.4 Packing group, if applicable: II
14.5 Environmental hazards (e.g., Marine pollutant (Yes/No)): Not determined
14.6 Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not determined
14.7 Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises: Not determined

15.Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question:

- **OSHA Hazard Communication Standard:** This material is classified as hazardous in accordance with OSHA 29 CFR 1910.1200 (see section 2).
- **TSCA:** Components of this product are listed on the TSCA Inventory.
- **SARA Title III, Section 302 (**Extremely Hazardous Substances): Hydrofluoric acid (CAS No:7664-39-3 ≤ 7.00), Sulfuric acid (CAS No:7664-93-9 ≤ 27.00)
- **SARA Title III, Section 313:** This product contains Hydrofluoric acid (CAS No: 7664-39-3 ≤ 7.00), Sulfuric acid (CAS No: 7664-93-9 ≤ 27.00), 2-Butoxyethanol (CAS No: 111-76-2 ≤ 2.00%) which are subject to the reporting requirements of SARA Title III.
- **SARA Title III, Section 311/312 Classifications:**

Fire Hazard: No	Pressure Hazard: No	Reactivity Hazard: Yes
Immediate Hazard: Yes	Delayed Hazard: Yes	

- **CERCLA Hazardous Substances:** This material contains Hydrofluoric acid (CAS No: 7664-39-3 ≤ 7.00, RQ=100 lbs.), Sulfuric acid (CAS No: 7664-93-9 ≤ 27.00, RQ=1000 lbs.), Phosphoric acid (CAS No: 7664-38-2 ≤ 5.00, RQ=5000 lbs.) which are subject to the reporting requirements under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.
- **Clean Air Act Section 112(r):** None
- **CLEAN WATER ACT/OIL POLLUTION ACT:** This material contains Hydrofluoric acid (CAS No: 7664-39-3 ≤ 7.00, RQ=100 lbs.), Sulfuric acid (CAS No: 7664-93-9 ≤ 27.00, RQ=1000 lbs.), Phosphoric acid (CAS No: 7664-38-2 ≤ 5.00, RQ=5000 lbs.) which are listed as hazardous substance under CWA.
- **CA PROP 65:**
  WARNING! This product contains a chemical known to the State of California to cause cancer:
  Sulfuric acid (CAS No:7664-93-9 ≤ 27.00)
  WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm: None

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16.Other information including date of preparation or last revision

Full text of H-Statements referred to under sections 2 and 3:
H227: Combustible liquid.
H290: May be corrosive to metals.
H300: Fatal if swallowed.
H302: Harmful if swallowed.
H304: May be fatal if swallowed and enters airways.
H310: Fatal in contact with skin.
H311: Toxic in contact with skin.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage.
H315: Causes skin irritation.
H316: Causes mild skin irritation.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H330: Fatal if inhaled.
H331: Toxic if inhaled.
H332: Harmful if inhaled.
H333: May be harmful if inhaled.
H335: May cause respiratory irritation.
H336: May cause drowsiness or dizziness.
H350: May cause cancer.
H402: Harmful to aquatic life.
H411: Toxic to aquatic life with long lasting effects.
Acute Tox.1 or 2 or 3 or 4: Acute Toxicity Category1 or 2 or 3 or 4
Carc.1A: Carcinogenicity Category 1A
Eye Dam./Irrit.1 or 2: Eye Damage/Irritation Category 1 or 2

Flam. Liq.2 or 3 or 4: Flammable Liquid Category 2 or 3 or 4
Met Corr.1: Corrosive to Metals Category 1
Skin Corr./Irrit.1 or 2 or 3: Skin Corrosion/Irritation Category 1 or 2 or 3
STOT SE3: Specific Target Organ Toxicity Single Exposure Category 3

Sources of key data used to compile the Safety Data Sheet:
International Agency for Research on Cancer
International Air Transport Association: Dangerous Goods Regulations.
International Maritime Organization: International Maritime Dangerous Goods Code
Components supplier data
Globally harmonized system of classification and labeling of chemicals (GHS Rev.5th e.2013)
European Chemicals Agency website
EU Registration, Evaluation and Restriction of Chemicals regulation (REACH): Classification and Labeling Inventory
US California Proposition 65
US Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
US Department of Health & Human Services. National Toxicology Program
US Department of Transport DOT 49 CFR
US National Fire Protection Association (NFPA) 704
US National Institute for Occupational Safety & Health (NIOSH) (exposure limits)
US Occupational Safety & Health Administration (OSHA) 29 CFR 1910.1200 (Hazard Communication Standard)
US OSHA 29 CFR 1910.1000 - Table Z1 (exposure limits)
US Superfund Amendments and Reauthorization Act (SARA) Title III Sections 302; 311/312 ; 313
US Toxic Substances Control Act (TSCA)

Key or legend to abbreviations and acronyms used in the safety data sheet:
ACGIH - American Conference of Governmental Industrial Hygienists
CAS No - Chemical Abstract System No.
CERCLA- US Comprehensive Environmental Response, Compensation, and Liability Act
COC - Cleveland Open Cup (flash and fire point)
DOT -Department Of Transportation
EPA - Environmental Protection Agency
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IMDG - International Maritime Dangerous Goods code
mg/m^3 - milligrams per cubic meter
mg/l - milligrams per liter
NIOSH - National Institute for Occupational Safety and Health
NFPA- US National Fire Protection Association
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
OEL-Occupational Exposure Limits
PEL - Permissible Exposure Limits
ppb - Parts Per Billion
ppm - Parts Per Million
PMCC - Pensky-Martin Closed Cup (flash point)
RCRA - EPA Resource Conservation and Recovery Act
SARA - Superfund Amendments and Reauthorization Act Title I, II, III
SDS - Safety Data Sheet
STEL- Short Term Exposure Limit
TCC - Tag Closed Cup (flash point)
TLV - Threshold Limit Value

TWA - Time Weighted Average Exposure < - Less than > - More than
Procedure used to derive the classification for mixtures according to Regulations 29 CFR 1900.1200 and GHS Rev.5th e.2013: Calculation method: Classification of mixtures based on ingredients of the mixture.
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