

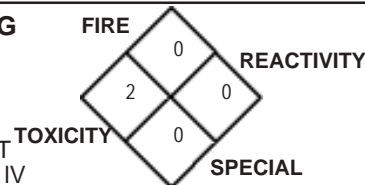


KLEENCO[®]
FOR QUALITY, VALUE AND PERFORMANCE

KLEENCO PRODUCTS, INC.
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TELEPHONE NUMBER
Reg. Phone
206-641-8888
For Emergency Assistance
Call Infotrac **(800) 535-5053**

HAZARD RATING
4 = EXTREME
3 = HIGH
2 = MODERATE
1 = SLIGHT
0 = INSIGNIFICANT
* = SEE SECTION IV



MATERIAL SAFETY DATA SHEET

PRODUCT NAME COIL KLEENER	DATE ISSUED	03-06-95	CODE 022-0116	DOT HAZARD Corrosive NA-1760
	PREPARED BY	Dale R. Silbaugh		
FORMULA Proprietary	CHEMICAL NAMES AND OR SYNONYMS Compound Cleaning Liquid			

I - COMPOSITIONAL INFORMATION/SARA III INFORMATION

INGREDIENTS	CAS NUMBER	OCCUPATION EXPOSURE LIMITS			VAPOR PRESSURE mm Hg @ TEMP	WEIGHT PERCENT
		OSHA PEL	ACGIH TLV	OTHER		
Ammonium Bifluoride	1341-49-7	2.5 MG/M3	2.5 MG/M3	2.5 MG/M3	Not Applicable 6.0 68°F.	14%
Citric Acid Anhydrous	77-92-9	None	None	None		
*Phosphoric Acid 75%	7664-38-2	1 MG/M3	1 MG/M3	None		

*Indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and 40 CFR 342. NOTE: The precise composition of this mixture is proprietary. A more complete description will be provided to a physician in the event of a medical emergency.

II - PHYSICAL PROPERTY INFORMATION

APPEARANCE and ODOR Slightly viscous, purple liquid, cinnamon odor			
MELTING POINT Not Applicable	BOILING POINT 275°-482°F.	COATING V.O.C. Not Applicable	EVAPORATION RATE Slower than ether
SOLUBILITY IN WATER Complete	SPECIFIC GRAVITY (Water = 1) 1.1	VAPOR DENSITY Heavier than air	

III - FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT Not Applicable	AUTO IGNITION TEMPERATURE Not Applicable	LOWER EXPLOSION LIMIT (%) Not Applicable	UPPER EXPLOSION LIMIT (%) Not Applicable
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EXTINGUISHING MEDIA

FOAM CO₂ DRY CHEMICAL WATER SPRAY OTHER

SPECIAL FIRE FIGHTING PROCEDURES For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of normal products of combustion or oxygen deficiency. Read the entire MSDS.

UNUSUAL FIRE AND EXPLOSION HAZARDS Extinguish all nearby sources of ignition since flammable hydrogen gas will be liberated from contact with some metals.

IV - HEALTH HAZARD INFORMATION

THRESHOLD LIMIT VALUE Not Established	ROUTE(s) OF ENTRY:	<input checked="" type="checkbox"/> INHALATION See Health Hazards	<input checked="" type="checkbox"/> SKIN See Health Hazards	<input checked="" type="checkbox"/> INGESTION See Health Hazards
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HEALTH HAZARDS (Acute and Chronic) CHRONIC EFFECTS OF EXPOSURE for Phosphoric Acid: May result in areas of destruction of skin tissue or primary irritant dermatitis. Similarly, inhalation of vapors or mists may cause varying degrees of damage to the affected tissues and also increasing susceptibility to respiratory illness. *See Section IX.

CARCINOGENICITY: Not considered to be a carcinogen NTP IARC Monographs OSHA Regulated

SIGNS AND SYMPTOMS OF EXPOSURE INHALATION: Vapors and mists are extremely corrosive to the nose, throat, and mucous membranes. Bronchitis, pulmonary edema, and chemical pneumonitis may occur. Irritation, coughing, chest pain, and difficulty in breathing may occur with brief exposure while prolonged exposure may result in more severe irritation and tissue damage. Breathing high concentrations may result in death. EYE CONTACT: Vapors, liquid, and mists are extremely corrosive to the eyes. Brief contact of the vapors will be severely irritating. Brief contact of the liquid or mists will severely damage the eyes and prolonged contact may cause permanent eye injury which may be followed by blindness. SKIN CONTACT: Vapors, mists, and liquid are extremely corrosive to the skin. Vapors will severely irritate the skin and liquid and mists will severely burn the skin. Prolonged liquid contact will burn or destroy surrounding tissue and death may accompany burns which extend over large portions of the body. SWALLOWED: Vapors, mists, and liquid are extremely corrosive to the mouth and throat. Swallowing the liquid burns the tissues, causes severe abdominal pain, nausea, vomiting, and collapse. Swallowing large quantities can cause death.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE Persons with pre-existing skin disorders, eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of Phosphoric Acid.

EMERGENCY AND FIRST AID PROCEDURES EYES: If this chemical contacts the eyes, immediately wash the eyes with large amounts of water, occasionally lifting the lower and upper lids. Get medical attention immediately. Contact lenses should not be worn when working with this chemical. SKIN: If this chemical contacts the skin, immediately flush the contaminated skin with water. If this chemical penetrates the clothing, immediately remove the clothing and flush the skin with water. Get medical attention promptly. INHALATION: If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform mouth-to-mouth resuscitation. Keep the affected person warm and at rest. Get medical attention as soon as possible. INGESTION: If this chemical has been swallowed, get medical attention immediately.

V - REACTIVITY INFORMATION

<input checked="" type="checkbox"/> STABLE	<input type="checkbox"/> UNSTABLE	CONDITIONS TO AVOID None	
HAZARDOUS DECOMPOSITION PRODUCTS May liberate Phosphorous Oxides			
HAZARDOUS POLYMERIZATION	<input type="checkbox"/> MAY OCCUR	<input checked="" type="checkbox"/> WILL NOT OCCUR	CONDITIONS TO AVOID Not Applicable
INCOMPATIBILITY (Materials to avoid) Alkalis, oxidizing or reducing materials, cyanides, sulfides, combustible materials, active metals, mild steel, copper, brass, and bronze.			

VI - SPILL OR LEAK PROCEDURE INFORMATION

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED		Stop the source of leak or release. Clean up releases as soon as possible, observing precautions is Special Protective Information. Contain liquid to prevent further contamination of soil, surface water or groundwater. Clean up small spills using appropriate techniques such as sorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Follow prescribed procedures for reporting and responding to larger releases.
WASTE DISPOSAL METHODS		Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental authorities for approved disposal of this material.

VII - SPECIAL PROTECTION INFORMATION

VENTILATION TYPE	Local mechanical exhaust ventilation, capable of maintaining emissions at the point of use below the PEL.		
RESPIRATORY PROTECTION	Wear a NIOSH-Approved respirator, appropriate for the concentration of vapor or mist encountered at the point of use.		
PROTECTIVE GLOVES	Impervious	EYE PROTECTION	Wear eye protection to prevent any possibility of eye contact.
OTHER PROTECTIVE EQUIPMENT	Wear appropriate equipment to prevent any possibility of skin contact with solutions having a pH <3 and repeated or prolonged skin contact with solutions having a pH >3.		

VIII - STORAGE AND HANDLING INFORMATION

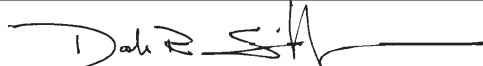
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE	Keep out of reach of children. Store in a cool dry place away from incompatible materials. Keep container tightly closed when not in use. Workers should wash immediately when skin becomes contaminated. Work clothing should be changed daily if there is any possibility that the clothing may be contaminated. Remove clothing immediately if it is non-impervious clothing that becomes contaminated. The following equipment should be available: Eyewash. Quick drench. It is generally recognized that contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of the injury.
OTHER PRECAUTIONS	Read and follow label instructions. The label contains information necessary for the proper use of the product. Containers, even those that have been emptied, will retain product residue and vapors. Always obey hazard warnings and handle empty containers as if they were full.

IX - TOXICITY INFORMATION

<p>*HEALTH HAZARDS for Ammonium Bifluoride: ACUTE HEALTH EFFECTS: Inhalation - Breathing dust can cause corrosion of the mucous membranes and severe irritation of the respiratory tract. EYE CONTACT: Dust irritates and burns the eyes. SKIN CONTACT: Dust causes severe irritation of the skin and fluoride-like burns, which may not be immediately evident. SWALLOWED: Dusts or solids are corrosive to the mouth and throat. Swallowing dusts or solids causes severe burning of the mouth, throat, and digestive tract accompanied by severe pain, vomiting, and collapse. Fluoride poisoning can occur with large doses. Symptoms include calcification of the ligaments and severe bone changes making normal movements painful, mottling of the teeth, pulmonary fibrosis, anemia, anorexia wasting and cachexia, and dental effects. The respiratory, circulatory, gastric, intestinal, and nervous system can be affected. There may be an impairment of growth in younger persons. Fluoride poisoning can be fatal. CHRONIC EFFECTS OF EXPOSURE: See Swallowed. MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Exposures can aggravate asthma attacks.</p>

X - MISCELLANEOUS INFORMATION

Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and the removal of the material from eyes, skin and clothing.

PRODUCT CODE 022-0116	NA = NOT AVAILABLE 03-06-95	DATE OF ISSUE	SUPERSEDES Any Previous MSDS	SIGNED 
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