



MATERIAL SAFETY DATA SHEET

PRODUCT IDENTIFICATION

PRODUCT NAME: LIQUID KLEENFLUSH

HMIS RATINGS

PART #: NCLKFS16 HEALTH: 1

CHEMICAL NAME: Hydrofluorocarbon

FIRE: 0

CHEMICAL FAMILY: N/A

REACTIVITY: 1

PROTECTIVE EQUIPMENT: B (Gloves, Safety Glasses)

PRODUCT INFORMATION

(800) 262-0012

MEDICAL EMERGENCY

(856) 455-4555

TRANSPORTATION EMERGENCY

CHEMTREC (800) 424-9300

DISTRIBUTOR:

NATIONAL REFRIGERANTS, INC.

661 KENYON AVE. ROSENHAYN, NJ 08352

HAZARDOUS INGREDIENTS

Principal Hazardous Component(s)

INGREDIENT NAME	CAS #	OSHA PEL	AGCIH TLV	VAPOR PRES @25 DEG. C.	LEL	UEL	FLASH POINT DEG. F.	% BY WEIGHT
Trans, Dichloroethylene	156-60-5	N/E	200ppm	400 mmHg	6.7	18	36 (CC)	30-60
Pentafluorobutane	406-58-6	N/A	N/A	43.3 kPa	N/A	N/A	N/A	30-60
Decafluoropentane (HFC 43-10)	138495-42-8	N/E	N/E	366 mmHg	N/A	N/A	0	<10
Ethyl Alcohol	64-17-5	1000ppm	1000ppm	44 mmHg	3.3	19	54 (TCC)	<5

N/E is not established

N/A is not available or not applicable

HAZARDS IDENTIFICATIONS

THRESHOLD LIMIT VALUE: See Hazardous Ingredients Table

SIGNS AND SYMPTOMS OF EXPOSURE:

EYE CONTACT: Contact with liquid or mist may cause irritation. Vapors may irritate eyes.

SKIN CONTACT: Prolonged contact may cause irritation, defatting of skin.

INHALATION: Overexposure to vapor may cause dizziness, loss of concentration and irritation. With high exposure levels, effects can include central nervous system (CNS), depression (intoxication) and cardiac arrhythmia. Product vapors displace air and can cause suffocation especially in confined space. **INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS OF THE CAN MAY BE HARMFUL OR FATAL.**

INGESTION: Aspiration may cause rapid absorption through the lungs, which may result in systemic effects.

IMPORTANT NOTICE: REPEATED AND PROLONGED OVEREXPOSURE TO SOLVENTS MAY LEAD TO PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. EYE WATERING, HEADACHES, NAUSEA, DIZZINESS AND LOSS OF COORDINATION ARE SIGNS THAT SOLVENT LEVELS ARE TOO HIGH. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.



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FIRST AID MEASURES

EYES: Flush with water for at least 15 minutes. Get medical assistance if irritation persists.
SKIN: Wash off in flowing water or shower. Remove contaminated clothing and wash before reuse.
INHALATION: Remove to fresh air. If not breathing, give mouth-to-mouth. If breathing is difficult, give oxygen. Do not give epinephrine or similar drugs. Call a physician.
INGESTION: Do not induce vomiting. Call a physician immediately.

NOTE TO PHYSICIANS: BECAUSE OF POSSIBLE DISTURBANCES OF CARDIAC RHYTHM, CATECHOLAMINE DRUGS, SUCH AS EPINEPHRINE, SHOULD ONLY BE USED WITH SPECIAL CAUTION IN SITUATIONS OF EMERGENCY LIFE SUPPORT.

FIRE FIGHTING MEASURES

FLASH POINT: None
FLAMMABLE LIMITS IN AIR - % BY VOLUME: NA
EXTINGUISHER MEDIA: Water fog, dry chemical, carbon dioxide
AUTO-IGNITION TEMPERATURE: Unknown
SPECIAL FIRE FIGHTING PROCEDURES: Water may be used to cool closed containers to prevent pressure build-up and possible bursting when exposed to high temperatures. Firemen should wear self-contained, positive pressure, respiratory equipment.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Keep Temperature of containers below 110 degrees F to keep from bursting.

ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILLS: Remove ignition sources. Mop up, wipe up, or soak up immediately. Use proper protective equipment.

LARGE SPILLS: Evacuate area. Remove ignition sources. Contain liquid; transfer to closed containers; keep out of water supplies.

HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Do not store above 110 Deg. F. Do not use or store near any open flames or ignition sources.

OTHER PRECAUTIONS: Do not puncture or incinerate. Exposure to temperatures above 110 Deg. F may cause can to burst with violence and cause injury. Vapors are heavier than air and will collect in low areas.

EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: NIOSH or Bureau of Mines approved organic vapor-type respirator is required in absence of proper environmental control.

VENTILATION: LOCAL EXHAUST: To keep below TLV
MECHANICAL (General): To keep below TLV
SPECIAL: None
OTHER: None

PROTECTIVE GLOVES: Solvent resistant gloves - impervious gloves

EYE PROTECTION: Safety glasses or goggles

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: None reasonably foreseeable.



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PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (Deg. F): Concentrate: 104
SPECIFIC GRAVITY (Water = 1): Concentrate: 1.2
VAPOR DENSITY (Air = 1): >1
EVAPORATION RATE (BA = 1): >1
SOLUBILITY IN WATER: Negligible
REACTIVITY IN WATER: None
APPEARANCE AND ODOR: Clear liquid, irritating odor at high concentrations

STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: Avoid any excessive heat, ignition sources, open flames, or other high temperatures which induce thermal decomposition.
INCOMPATIBILITY (Materials to Avoid): Chemically Active Metals. Oxidizing agents. Sodium, Potassium, Calcium, etc. Alkali or alkaline earth metals. Powdered Aluminum, Zinc, Magnesium, Beryllium, etc.
HAZARDOUS DECOMPOSITION PRODUCTS: Hydrofluoric acid, hydrochloric acid, possibly carbonyl fluoride. See HAZARDS IDENTIFICATIONS: Signs and Symptoms of Exposure.
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Not Applicable

TOXICOLOGICAL INFORMATION

See Hazardous Identifications

ECOLOGICAL INFORMATION

See Hazardous Ingredients Table

DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS: Dispose in accordance with Federal, State, and Local regulations. Do not incinerate closed or empty containers.

TRANSPORTATION INFORMATION

DOT Shipping Name:	N/A
Hazard Class:	N/A
UN Number:	N/A
Packing Group:	N/A

REGULATORY INFORMATION

SUBJECT TO SECTION 313 OF SARA TITLE III: NO

ALL CHEMICAL COMPONENTS ARE LISTED IN THE TSCA INVENTORY.

CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN: NATIONAL TOXICOLOGY PROGRAM: No
I.A.R.C. MONOGRAPHS: No



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OSHA: No

OSHA PERMISSIBLE EXPOSURE LIMIT: See Hazardous Ingredients Table

AGCIH THRESHOLD LIMIT VALUE: See Hazardous Ingredients Table

OTHER EXPOSURE LIMITED USED: None

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DATE OF LATEST REVISION/REVIEW:

04/2013

PERSON RESPONSIBLE FOR MSDS:

Matt Callahan