

SAFETY-KLEEN REFINED PERCHLOROETHYLENE
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SAFETY-KLEEN REFINED PERCHLOROETHYLENE

SYNONYMS: Tetrachloroethylene; Tetrachloroethene; Perchloroethene; 1,1,2,2-Tetrachloroethylene

PRODUCT CODE: 1021737, 1024737

PRODUCT USE: Cleaning agent.
If this product is used in combination with other products, refer to the Material Safety Data Sheet for those products.

This number is for emergency use only. If you desire non-emergency product information, please call a phone number listed below.

**24-HOUR EMERGENCY PHONE NUMBER
MEDICAL AND TRANSPORTATION (SPILL):**

1-800-468-1760

SUPPLIER: Safety-Kleen Systems, Inc.
5400 Legacy Drive
Cluster II, Building 3
Plano, Texas 75024
USA
1-800-669-5740
www.Safety-Kleen.com

TECHNICAL INFORMATION: 1-800-669-5740 Press 1 then 1, then Extension 7500

MSDS FORM NUMBER: 82335

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PREPARED BY: Product MSDS Coordinator

APPROVED BY: MSDS Task Force

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SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

WT%	NAME	SYNONYM	CAS NO.	OSHA PEL**		ACGIH TLV®		LD ^a	LC ^b
				TWA ppm	STEL	TWA ppm	STEL ppm		
97- 100	Ethene,tetrachloro-	Perchloroethylene; Tetrachloroethylene	127-18- 4	100	N.Av.	25	100	2629 (150) ^c	6200

N. Av. = Not Available
^aOral-Rat LD₅₀ (mg/kg)

^bInhalation-Mouse LC₅₀(mg/kg/4H)
^cNIOSH ILDH ppm

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE

Clear, colorless liquid, slight sweet odor.

WARNING!

HEALTH HAZARDS

May be harmful if inhaled.

May be harmful if swallowed.

May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin.

Suspect cancer hazard. Contains material which may cause cancer. Risk of cancer depends on duration and level of exposure.

Contains material which may cause liver, kidney, and central nervous system damage.

ENVIRONMENTAL HAZARDS

Toxic to fish.

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POTENTIAL HEALTH EFFECTS

INHALATION (BREATHING): High concentrations of vapor or mist may be harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects. High concentrations of vapor or mist may cause liver and kidney damage.

EYES: May cause irritation. Symptoms include itching, burning, redness and tearing.

SKIN: May cause irritation. Not likely to be absorbed through the skin in harmful amounts.

INGESTION (SWALLOWING): This product may be harmful if swallowed. May cause throat irritation, nausea, vomiting, central nervous system effects as noted under **INHALATION (BREATHING)**, unconsciousness, coma, and death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing cardiovascular, liver, kidney, respiratory tract (nose, throat, and lungs), central nervous system, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

CHRONIC: Prolonged or repeated inhalation may cause toxic effects as noted under **INHALATION (BREATHING)**. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis).

CANCER INFORMATION: This product contains perchloroethylene CAS 127-18-4 which may cause cancer if inhaled. Risk of cancer depends on duration and level of exposure. For more information, see **SECTION 11: CARCINOGENICITY**.

Also see **SECTION 15: CALIFORNIA**.

POTENTIAL ENVIRONMENTAL EFFECTS : Toxic to fish. Also see **SECTION 12: ECOLOGICAL INFORMATION**.

SECTION 4: FIRST AID MEASURES

INHALATION (BREATHING): Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.

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- EYES:** If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.
- SKIN:** Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists. Wash contaminated clothing before reuse. Discard any shoes or clothing items that cannot be decontaminated.
- INGESTION (SWALLOWING):** Do NOT induce vomiting. Immediately get medical attention. Call 1-800-468-1760 for additional information. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person.
- NOTE TO PHYSICIANS:** Treat symptomatically and supportively. Do not administer Adrenaline (epinephrine) or similar drugs following product overexposure. Increased sensitivity of the heart to such drugs may be caused by overexposure to product. Administration of gastric lavage and/or activated charcoal slurry, if warranted, should be performed by qualified medical personnel. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

SECTION 5: FIRE FIGHTING MEASURES
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- FLASH POINT:** Not applicable
- FLAMMABLE LIMITS IN AIR:** **LOWER:** Not applicable **UPPER:** Not applicable
- AUTOIGNITION TEMPERATURE:** Not applicable
- HAZARDOUS COMBUSTION PRODUCTS:** Product itself does not burn, but may decompose upon heating to produce phosgene, halogenated compounds, hydrogen chloride gas, carbon monoxide, and unidentified organic compounds.
- CONDITIONS OF FLAMMABILITY:** Product will not burn.
- EXTINGUISHING MEDIA:** Carbon dioxide, regular foam, dry chemical, water spray, or water fog.

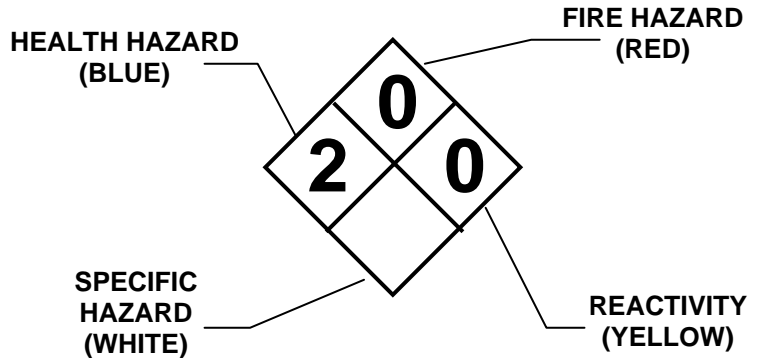
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NFPA 704

HAZARD IDENTIFICATION:

This information is intended solely for the use by individuals trained in this system.



FIRE FIGHTING INSTRUCTIONS:

Keep storage containers cool with water spray. A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

FIRE AND EXPLOSION HAZARDS:

Heated containers may rupture. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact or static discharge.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, spark proof tool into a sealable container for disposal.

Additionally, for large spills: Dike far ahead of liquid spill for collection and later disposal.

There may be specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product. Also see **SECTION 15: REGULATORY INFORMATION**.

SECTION 7: HANDLING AND STORAGE

HANDLING:

Keep away from sparks or flame. Use clean tools. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes.

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SHIPPING AND STORING: Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Empty product containers may retain product residue and can be dangerous.

See **SECTION 14: TRANSPORTATION INFORMATION** for Packing Group information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Use NIOSH-certified, air-supplied respirators (self-contained breathing apparatus or air-line) respiratory protective equipment when concentration of vapor or mist exceeds applicable exposure limits. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4. Consult a qualified Industrial Hygienist or Safety Professional for respirator selection guidance.

EYE PROTECTION: Where eye contact is likely, wear chemical goggles; contact lens use is not recommended.

SKIN PROTECTION: Where skin contact is likely, wear laminate or equivalent protective gloves; use of natural rubber (latex) or equivalent gloves is not recommended.

To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant face shield, boots, apron, whole body suits, or other protective clothing.

PERSONAL HYGIENE: Use good personal hygiene. Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard leather articles, such as shoes, saturated with this product.

OTHER PROTECTIVE EQUIPMENT: Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE, APPEARANCE, AND ODOR:	Clear, colorless liquid, slight sweet odor.
ODOR THRESHOLD:	50 ppm
MOLECULAR WEIGHT:	165.8
SPECIFIC GRAVITY:	1.62 (water = 1)
DENSITY:	13.5 LB/US gal (1620 g/l)
VAPOR DENSITY:	5.2 (air = 1)
VAPOR PRESSURE:	14 mm Hg at 68°F (20°C)
BOILING POINT:	250°F (121°C)
FREEZING/MELTING POINT:	-2°F (-19°C)
pH:	Not applicable
EVAPORATION RATE:	2.8 (butyl acetate = 1)
SOLUBILITY IN WATER:	Insoluble
FLASH POINT:	Not applicable
FLAMMABLE LIMITS IN AIR:	LOWER: Not applicable UPPER: Not applicable
AUTOIGNITION TEMPERATURE:	Not applicable

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal temperatures and pressures. Avoid heat, sparks or flame when not in use.
INCOMPATIBILITY:	Avoid acids, alkalies, oxidizing agents, or reactive metals.
REACTIVITY:	Polymerization is not known to occur under normal temperature and pressures. Not reactive with water.

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HAZARDOUS DECOMPOSITION PRODUCTS: None under normal temperatures and pressures. See also **SECTION 5: HAZARDOUS COMBUSTION PRODUCTS.**

SECTION 11: TOXICOLOGICAL INFORMATION

SENSITIZATION: Based on best current information, there is no known human sensitization associated with this product.

MUTAGENICITY: Perchloroethylene has demonstrated experimental effects of mutagenicity.

CARCINOGENICITY: Perchloroethylene is categorized by IARC as probably carcinogenic to humans (Group 2A). Perchloroethylene is listed by NTP as reasonably anticipated to be a carcinogen.

As per ACGIH, perchloroethylene is categorized as a confirmed animal carcinogen with unknown relevance to humans (A3). This agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at sites(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

Also see **SECTION 3: CANCER INFORMATION** and **SECTION 15: CALIFORNIA.**

REPRODUCTIVE TOXICITY: Perchloroethylene has demonstrated animal effects of reproductive toxicity.

TERATOGENICITY: Perchloroethylene has demonstrated experimental effects of teratogenicity.

TOXICOLOGICALLY SYNERGISTIC PRODUCT(S): Based on best current information, there are no known toxicologically synergistic products associated with this product.

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SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Toxic to fish.
Component Analysis - Ecotoxicity - Aquatic Toxicity

Ethene,tetrachloro- (127-18-4)

Test & Species		Conditions
96 Hr LC50 rainbow trout	5.28 mg/L	static, 12 °C
96 Hr LC50 fathead minnow	13.4 mg/L	flow-through
96 Hr LC50 bluegill	12.9 mg/L	static

OCTANOL/WATER PARTITION COEFFICIENT: 2.53-2.88 @ 68°F (20°C)

VOLATILE ORGANIC COMPOUNDS: 0 WT%; 0 LB/US gal: 0 g/l
As per 40 CFR Part 51.100(s)

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

USEPA WASTE CODE(S): U210
Based on available data, this information applies to the product as supplied to the user. Processing, use, or contamination by the user may change the waste code applicable to the disposal of this product.

SECTION 14: TRANSPORT INFORMATION

DOT: **Shipping Name:** Tetrachloroethylene
UN/NA #: UN1897 **Hazard Class:** 6.1 **Packing Group:** III

TDG: **Shipping Name:** Tetrachloroethylene
UN/NA #: UN1897 **Hazard Class:** 6.1 **Packing Group:** III

EMERGENCY RESPONSE GUIDE NUMBER: 160
Reference *North American Emergency Response Guidebook*

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SECTION 15: REGULATORY INFORMATION

USA REGULATIONS

OSHA OSHA Regulated Chemicals
Ethene,tetrachloro- (127-18-4)
Present (Select Carcinogen)

SARA SECTIONS 302 AND 304: Based on the ingredient(s) listed in **SECTION 2**, this product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

SARA SECTIONS 311 AND 312: This product poses the following health hazard(s) as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):

Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard

SARA SECTION 313: The following component is subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

Material	CAS	De Minimis Concentration
Perchloroethylene	127-18-4	0.1 %

CERCLA: Based on the ingredient(s) listed in SECTION 2, this product contains the following "hazardous substance(s)" listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4 with the following reportable quantities (RQ):

Material	CAS	RQ (final)
Perchloroethylene	127-18-4	100 LB (45.4 KG)

TSCA: All the components of this product are listed on, or are automatically included as "naturally occurring chemical substances" on, or are exempted from the requirement to be listed on, the TSCA Inventory.

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CALIFORNIA: This product does contain a detectable amount of perchloroethylene CAS 127-18-4. **WARNING:** This chemical is known to the State of California to cause cancer.

This product does not contain detectable amounts of any chemical known to the State of California to cause birth defects or other reproductive harm.

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

WHMIS: D1B, D2A, D2B

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): All the components of this product are listed on, or are automatically included as "substance occurring in nature" on, or are exempted from the requirements to be listed on, the Canadian Domestic Substances List (DSL).

SECTION 16. OTHER INFORMATION

REVISION INFORMATION: This MSDS has been revised in the following sections: 1, 2, 3, 4, 11, 12, 13, 15, and 16.

LABEL/OTHER INFORMATION: No additional information available.

User assumes all risks incident to the use of this (these) product(s). To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the product(s) as supplied to the user.

