

**SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****Company Address:**8125 Cobb Center Drive  
Kennesaw, GA 30152Product Information: 800-TECH-401  
Customer Service: 800-645-5244Emergency: (Chemtrec) 800-424-9300  
Revision Date: January 24, 2012**Product Identification****Max-Kleen™ Xtreme™ liquid****Product Code:** ES184, ES584, ES5584**SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS****For all products produced after February 1st, 2012 (date code 21032)**

Chemical Name	CAS#	Wt. % Range
n-propyl bromide	106-94-5	90.0 – 99.0
n-propanol	71-23-8	1.0 – 5.0
1,2 Epoxybutane	106-88-7	<1.0

**For all products produced before February 1st, 2012 (date code 21032)**

Chemical Name	CAS#	Wt. % Range
n-propyl bromide	106-94-5	>99.0
1,2 Epoxybutane	106-88-7	<1.0

**SECTION 3: HAZARD IDENTIFICATION**Physical state: Liquid. Odor: SweetishOSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)Emergency Overview:

CAUTION!

MAY BE HARMFUL IF SWALLOWED. MAY CAUSE EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA. POSSIBLE CANCER HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE CANCER, BASED ON ANIMAL DATA.

May be harmful if swallowed. Moderately irritating to eyes. Slightly irritating to the skin. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Contains material that may cause target organ damage, based on animal data. Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure. Wash thoroughly after handling..

Potential Health Acute Health Effects:Eyes: Moderately irritating to eyes..Skin: Slightly irritating to the skin. Ingestion: Harmful if swallowed.Inhalation: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.Potential chronic health effectsChronic effects: Contains material that may cause target organ damage, based on animal data.Carcinogenicity: Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.Mutagenicity: No known significant effects or critical hazards.Teratogenicity: No known significant effects or critical hazards.Developmental effects: No known significant effects or critical hazards.Fertility effects: No known significant effects or critical hazards.Target organs: Contains material which may cause damage to the following organs:

gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Over-exposure signs/symptomsInhalation: No specific data.Ingestion: No specific data.Skin: Adverse symptoms may include the following: irritation, rednessEyes: Adverse symptoms may include the following: pain or irritation, watering, rednessMedical conditions aggravated by overexposure: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.**SECTION 4: FIRST AID MEASURES**Eye Contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.Ingestion: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.Notes to physician: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.**SECTION 5: FIRE FIGHTING MEASURES**Flammability of the product: In a fire or if heated, a pressure increase will occur and the container may burst.Flash Point: None to boiling (TCC)LEL/UEL: Lower: 3.8% / Upper: 9.5% (% by volume in air)

Extinguishing media:

Suitable: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable: Not known.

Special Hazards: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous thermal decomposition products: Decomposition products may include the following materials: carbon dioxide, carbon monoxide, halogenated compounds carbonyl halides.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

Personal Precautions: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Large Spills: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Small Spills: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**SECTION 7: HANDLING AND STORAGE**

Handling: Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Keep container closed when not in use. Do not store in direct sunlight.

**KEEP OUT OF REACH OF CHILDREN.**

**SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION**United States & Canada:

**Ingredient**  
**Propane, 1-bromo-**

**Exposure limits**

**ACGIH TLV (United States, 1/2009).**

TWA: 10 ppm 8 hour(s).

**BC 6/2008**

TWA: 10 ppm 8 hour(s).

**ON 6/2008**

TWA: 10 ppm 8 hour(s).

**propan-1-ol**

**ACGIH TLV (United States, 2/2010).**

TWA: 100 ppm 8 hour(s).

**NIOSH REL (United States, 6/2009). Absorbed through skin.**

STEL: 625 mg/m<sup>3</sup> 15 minute(s).

STEL: 250 ppm 15 minute(s).

TWA: 500 mg/m<sup>3</sup> 10 hour(s).

TWA: 200 ppm 10 hour(s).

**OSHA PEL (United States, 6/2010).**

TWA: 500 mg/m<sup>3</sup> 8 hour(s).

TWA: 200 ppm 8 hour(s).

**OSHA PEL 1989 (United States, 3/1989).**

STEL: 625 mg/m<sup>3</sup> 15 minute(s).

STEL: 250 ppm 15 minute(s).

TWA: 500 mg/m<sup>3</sup> 8 hour(s).

TWA: 200 ppm 8 hour(s).

**AB 4/2009[3]**

STEL: 98 mg/m<sup>3</sup> 15 minute(s).

STEL: 400 ppm 15 minute(s).

TWA: 492 mg/m<sup>3</sup> 8 hour(s).

TWA: 200 ppm 8 hour(s).

**BC 6/2008**

TWA: 100 ppm 8 hour(s).

**ON 6/2008**

TWA: 100 ppm 8 hour(s).

**QB 6/2008[1]**

STEL: 614 mg/m<sup>3</sup> 15 minute(s).

STEL: 250 ppm 15 minute(s).

TWA: 492 mg/m<sup>3</sup> 8 hour(s).

TWA: 200 ppm 8 hour(s).

**1,2-epoxybutane****AIHA WEEL (United States, 5/2010).**

TWA: 2 ppm 8 hour(s).

[1]Absorbed through skin. [3]Skin sensitization

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures: No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**Physical State: Clear, colorless liquidOdor: SweetishpH: NAVapor Pressure: 14.8 kPa (110.8 mm Hg) [20°C]Boiling Point: 70°C (158°F)Auto-ignition temperature: 460°C (860°F)Solubility in Water: NegligibleSpecific Gravity: 1.35

(Water =1)

Evaporation Rate: >1 (Butyl acetate=1)Percent Volatile: 100%Vapor Density: >1 [Air = 1]**SECTION 10: STABILITY AND REACTIVITY**Stability - This product is stable.Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.Conditions to Avoid: No specific data.Materials to avoid: Reactive or incompatible with the following materials: acids.Products of Decomposition: Under normal conditions of storage and use, hazardous decomposition products should not be produced.Hazardous Polymerization: Will not occur**SECTION 11: TOXICOLOGICAL INFORMATION****United States, Canada and Mexico**Acute toxicity

<u>Product/ingredient name</u>	<u>Result</u>	<u>Species</u>	<u>Dose</u>	<u>Exposure</u>
Propane, 1-bromo-	LD50 Intraperitoneal	Rat	2950 mg/kg	-
	LD50 Oral	Rat	3600 mg/kg	-
	LDLo Oral	Rat	4 g/kg	-
	LC50 Inhalation Vapor	Rat	253 g/m <sup>3</sup>	30 minutes
propan-1-ol	LD50 Dermal	Rabbit	5040 mg/kg	-
	LD50 Intraperitoneal	Rat	2164 mg/kg	-
	LD50 Intravenous	Rat	590 mg/kg	-
	LD50 Oral	Rat	2200 mg/kg	-
	LD50 Oral	Rat	1870 mg/kg	-
1,2-epoxybutane	LD50 Dermal	Rabbit	2100 uL/kg	-
	LD50 Oral	Rat	500 mg/kg	-
	LC50 Inhalation Vapor	Rat	6300 mg/m <sup>3</sup>	4 hours

Conclusion/Summary : Not available.Chronic toxicityConclusion/Summary : Not available.Irritation/Corrosion

<u>Product/ingredient name</u>	<u>Result</u>	<u>Species</u>	<u>Score</u>	<u>Exposure</u>	<u>Observation</u>
propan-1-ol	Eyes – Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Mild irritant	Human	-	47 hours 100 Percent	-
	Skin - Mild irritant	Human	-	24 hours 100 Percent	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
1,2-epoxybutane	Eyes – Moderate irritant	Rabbit	-	24 hours 100 milligrams	-

Skin - Mild irritant      Rabbit      -      24 hours 500 milligrams      -  
Conclusion/Summary : Not available.

**Sensitizer**

Conclusion/Summary : Not available.

**Carcinogenicity**

Conclusion/Summary : Not available.

**Classification**

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
propan-1-ol	A4	-	-	None.	-	-
1,2-epoxybutane	-	2B	-	-	-	-

**Mutagenicity**

Conclusion/Summary : Not available.

**Teratogenicity**

Conclusion/Summary : Not available.

**Reproductive toxicity**

Conclusion/Summary : Not available.

**SECTION 12: ECOLOGICAL INFORMATION**

Ecotoxicity : No known significant effects or critical hazards.

**United States, Canada and Mexico****Aquatic ecotoxicity**

Product/ingredient name	Test	Result	Species	Exposure
Propane, 1-bromo-	-	Acute LC50 67300 ug/L Freshwater	Fish – Fathead minnow – Pimephales promelas – 30 days - 21 mm - 0.139 g	96 hours
propan-1-ol	-	Acute EC50 4620000 ug/L Fresh water	Daphnia – Water flea – Daphnia magna – Neonate - <24 hours	48 hours
	-	Acute EC50 4480000 ug/L Fresh water	Algae – Green algae – Selenastrum sp	96 hours
	-	Acute EC50 3644000 to 3977000 ug/L Fresh Water	Daphnia – Water flea – Daphnia magna - 6 to 24 hours	48 hours
	-	Acute EC50 3200000 to 5600000 ug/L Fresh water	Algae – Green algae - Selenastrum sp.	72 hours
	-	Acute LC50 7820000 ug/L Fresh water	Daphnia – Water flea – Daphnia magna - <1 days	48 hours
	-	Acute LC50 6980000 ug/L Fresh water	Daphnia – Water flea – Daphnia magna - <1 days	48 hours
	-	Acute LC50 6700000 ug/L Fresh water	Daphnia – Water flea – Daphnia magna - <1 days	48 hours
	-	Acute LC50 6540000 ug/L Fresh water	Daphnia – Water flea – Daphnia magna - <1 days	48 hours
	-	Acute LC50 6300000 ug/L Fresh water	Daphnia – Water flea – Daphnia magna - <1 days	48 hours
	-	Acute LC50 5820000 ug/L Fresh water	Daphnia – Water flea – Daphnia cucullata - 11 days	48 hours
	-	Acute LC50 4630000 to 5000000 ug/L Fresh water	Fish – Fathead minnow – Pimephales promelas – 29 days - 23.8 mm - 0.21 g	96 hours
	-	Acute LC50 4480000 to 4880000ug/L Fresh water	Fish – Fathead minnow – Pimephales promelas – 30 days - 21.3 mm - 0.16	96 hours
	-	Acute LC50 3800000 ug/L Marine water	Fish - Bleak – Alburnus alburnus - 8 to 10 cm	96 hrs
	-	Acute LC50 3100000 ug/L Fresh water	Daphnia – Water flea – Daphnia pulex - <1 days	48 hours
	-	Acute LC50 3000000 to 4000000 ug/L Marine water	Fish - Bleak – Alburnus alburnus - 8 cm	96 hours
	-	Acute LC50 2950000 ug/L Fresh water	Daphnia – Water flea – Daphnia pulex - <1 days	48 hours

Conclusion/Summary : Not available.

**Biodegradability**

Conclusion/Summary : Not available.

**Environmental Impact Information**

Avoid runoff into storm sewers and ditches which lead to waterways. Water runoff can cause environmental damage.

**REPORTING**

US regulations require reporting spills of this material that could reach any surface waters. The toll free number for the US Coast Guard National Response Center is: **1-800-424-8802**

**SECTION 13: DISPOSAL CONSIDERATIONS**

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

#### SECTION 14: TRANSPORTATION INFORMATION

Proper  
Shipping Name  
Air and Ground: Cleaning Compound – Not regulated

#### SECTION 15: REGULATORY INFORMATION

HCS Classification : Irritating material  
Carcinogen  
Target organ effects.

U.S. Federal regulations: TSCA 8(a) IUR Exempt/Partial exemption: Not determined  
United States inventory (TSCA 8b): Not determined.  
SARA 302/304/311/312 extremely hazardous substances: No products were found.  
SARA 302/304 emergency planning and notification: No products were found.  
SARA 302/304/311/312 hazardous chemicals: Propane, 1-bromo-; propan-1-ol  
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Propane, 1-bromo-: Fire hazard, Delayed (chronic) health hazard; propan-1-ol: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard  
Clean Air Act (CAA) 112 accidental release prevention: No products were found.  
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed  
Clean Air Act Section 602 Class I Substances : Not listed  
Clean Air Act Section 602 Class II Substances : Not listed  
DEA List I Chemicals (Precursor Chemicals) : Not listed  
DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 313 Form R – Reporting requirements	Product name	CAS number	Concentration
	1,2-epoxybutane	106-88-7	0.1 – 1
Supplier notification	1,2-epoxybutane	106-88-7	0.1 – 1

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations:

Connecticut Carcinogen Reporting: None of the components are listed.  
Connecticut Hazardous Material Survey: None of the components are listed.  
Florida substances: None of the components are listed.  
Illinois Chemical Safety Act: None of the components are listed.  
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.  
Louisiana Reporting: None of the components are listed.  
Louisiana Spill: None of the components are listed.  
Massachusetts Spill: None of the components are listed.  
Massachusetts Substances: The following components are listed: N-PROPYL BROMIDE; PROPYL ALCOHOL  
Michigan Critical Material: None of the components are listed.  
Minnesota Hazardous Substances: None of the components are listed.  
New Jersey Hazardous Substances: The following components are listed: PROPYL ALCOHOL; 1-PROPANOL; 1,2-BUTYLENE OXIDE; 1,2-EPOXYBUTANE  
New Jersey Spill: None of the components are listed.  
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.  
New York Acutely Hazardous Substances: The following components are listed: 1,2-Epoxybutane  
New York Toxic Chemical Release Reporting: None of the components are listed.  
Pennsylvania RTK Hazardous Substances: The following components are listed: PROPANE, 1-BROMO-; 1-PROPANOL; OXIRANE, ETHYL  
Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65: **WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.**

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Propane, 1-bromo-	No.	Yes.	No.	No.

United States inventory  
(TSCA 8b): Not determined.  
Canada inventory : Not determined

WHMIS: Class D-2A: Material causing other toxic effects (Very toxic).  
Class D-2B: Material causing other toxic effects (Toxic).  
Canadian lists: CEPA Toxic substances: The following components are listed: Ethyloxirane  
Canadian ARET: None of the components are listed.  
Canadian NPRI: None of the components are listed.  
Alberta Designated Substances: None of the components are listed.  
Ontario Designated Substances: None of the components are listed.

Quebec Designated Substances: None of the components are listed.

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

EU regulations



Hazard symbol or symbols:

Risk phrases:

R60- May impair fertility.  
 R63- Possible risk of harm to the unborn child.  
 R48/20- Also harmful: danger of serious damage to health by prolonged exposure through inhalation.  
 R36/37/38- Irritating to eyes, respiratory system and skin.  
 R67- Vapors may cause drowsiness and dizziness.

Safety phrases

S53- Avoid exposure - obtain special instructions before use.  
 S23- Do not breathe  
 S36/37- Wear suitable protective clothing and gloves.

International lists:

Australia inventory (AICS): All components are listed or exempted.  
 China inventory (IECSC): All components are listed or exempted.  
 Japan inventory: All components are listed or exempted.  
 Korea inventory: All components are listed or exempted.  
 New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.  
 Philippines inventory (PICCS): All components are listed or exempted.

Chemical Weapons Convention List Schedule I Chemicals: Not Listed.

Chemical Weapons Convention List Schedule II Chemicals: Not Listed.

Chemical Weapons Convention List Schedule III Chemicals: Not Listed.

**SECTION 16: OTHER INFORMATION**

<b>NFPA AND HMIS CODES:</b>	<b>NFPA</b>	<b>HMIS</b>
HEALTH	2	2
FLAMMABILITY	1	1
REACTIVITY	1	1
PERSONAL PROTECTION	-	B

Normal ventilation for standard manufacturing practices is usually adequate. Local exhaust should be used when large amounts are released.

To the best of our knowledge, the information contained herein is accurate. However, all materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist.