



Material Safety Data Sheet

Liquid X

1. Product and company identification

Product name : Liquid X
Material uses : Bicycle lubricant.
Supplier/Manufacturer : Pedro's Incorporated
 600 Research Drive
 Wilmington, Massachusetts 01887
Validation date : 06/30/2008
Responsible name : Atrion Regulatory Services, Inc.
In case of emergency : CHEMTREC International: (703) 527-3887
 24/7

2. Hazards identification

Physical state : Liquid. [Opaque.]
Odor : Solvent.
OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview : WARNING!
 FLAMMABLE. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. HIGH PRESSURE GAS.

Flammable aerosol. Irritating to eyes, respiratory system and skin. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Avoid contact with eyes, skin and clothing. Contains material that can cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : Irritating to respiratory system.
Ingestion : No known significant effects or critical hazards.
Skin : Irritating to skin.
Eyes : Irritating to eyes.

Potential chronic health effects

Chronic effects : Contains material that can cause target organ damage.
Carcinogenicity : No known significant effects or critical hazards.
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 causes damage to the following organs: upper respiratory tract, skin, central nervous system (CNS).

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
 respiratory tract irritation
 coughing
Ingestion : No specific data.
Skin : Adverse symptoms may include the following:
 irritation
 redness



2. Hazards identification

- Eyes** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Medical conditions aggravated by over-exposure** : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3. Composition/information on ingredients

United States

Name	CAS number	%
Isobutane	75-28-5	30 - 60
Heptane	142-82-5	10 - 30

Canada

Name	CAS number	%
Isobutane	75-28-5	30 - 60
Heptane	142-82-5	10 - 30

Mexico

Name	UN number	IDLH	Classification				CAS number	%
			H	F	R	Special		
Isobutane	UN1969	-	1	4	0	75-28-5	30 - 60	
Heptane	UN1206	750 ppm	1	3	0	142-82-5	10 - 30	

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.
- Skin contact** : Wash with soap and water. Get medical attention if symptoms occur.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.
- Ingestion** : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

- Flammability of the product** : Flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- 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.

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. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- 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**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.
- Large spill** : 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). Use spark-proof tools and explosion-proof equipment. 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.

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. Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Empty containers retain product residue and can be hazardous.
- Storage** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

United States

Product name

Exposure limits

Isobutane

ACGIH TLV (United States, 1/2007).

TWA: 1000 ppm 8 hour(s).

NIOSH REL (United States, 12/2001).

TWA: 1900 mg/m³ 10 hour(s).

TWA: 800 ppm 10 hour(s).

Heptane

ACGIH TLV (United States, 1/2007).

STEL: 2050 mg/m³ 15 minute(s).

STEL: 500 ppm 15 minute(s).

TWA: 1640 mg/m³ 8 hour(s).

TWA: 400 ppm 8 hour(s).

NIOSH REL (United States, 12/2001).

CEIL: 1800 mg/m³ 15 minute(s).

CEIL: 440 ppm 15 minute(s).

TWA: 350 mg/m³ 10 hour(s).

TWA: 85 ppm 10 hour(s).

OSHA PEL (United States, 11/2006).

TWA: 2000 mg/m³ 8 hour(s).

TWA: 500 ppm 8 hour(s).

Canada

Product name

Exposure limits

Isobutane

CA British Columbia Provincial (Canada, 7/2007).

TWA: 1000 ppm 8 hour(s).

CA Ontario Provincial (Canada, 3/2007).

TWAEV: 800 ppm 8 hour(s).

TWAEV: 1900 mg/m³ 8 hour(s).

Heptane

CA Alberta Provincial (Canada, 10/2006).

15 min OEL: 2050 mg/m³ 15 minute(s).

8 hrs OEL: 1640 mg/m³ 8 hour(s).

8 hrs OEL: 400 ppm 8 hour(s).

15 min OEL: 500 ppm 15 minute(s).

CA British Columbia Provincial (Canada, 7/2007).

TWA: 400 ppm 8 hour(s).

STEL: 500 ppm 15 minute(s).

CA Ontario Provincial (Canada, 3/2007).

TWAEV: 400 ppm 8 hour(s).

8 . Exposure controls/personal protection

TWAEV: 1635 mg/m³ 8 hour(s).
 STEV: 500 ppm 15 minute(s).
 STEV: 2045 mg/m³ 15 minute(s).
CA Quebec Provincial (Canada, 12/2006).
 TWAEV: 400 ppm 8 hour(s).
 TWAEV: 1640 mg/m³ 8 hour(s).
 STEV: 500 ppm 15 minute(s).
 STEV: 2050 mg/m³ 15 minute(s).

Mexico

Product name

Isobutane

Heptane

Exposure limits

ACGIH TLV (United States, 1/2007).

TWA: 1000 ppm 8 hour(s).

NOM-010-STPS (Mexico, 9/2000). Skin

LMPE-CT: 2000 mg/m³ 15 minute(s).

LMPE-CT: 500 ppm 15 minute(s).

LMPE-PPT: 1600 mg/m³ 8 hour(s).

LMPE-PPT: 400 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

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 : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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

Eyes : Not available.

Skin : Not available.

Respiratory : Not available.

Hands : Not available.

Personal protective equipment (Pictograms) :



HMIS Code/Personal protective equipment : B

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.



9 . Physical and chemical properties

Physical state	: Liquid. [Opaque.]
Color	: Beige.
Odor	: Solvent.

10 . Stability and reactivity

Stability	: The product is stable.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame).
Materials to avoid	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Conditions of reactivity	: Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge. Highly flammable in the presence of the following materials or conditions: heat.

11 . Toxicological information

Acute toxicity

Inhalation	: Irritating to respiratory system.
Ingestion	: No known significant effects or critical hazards.
Skin	: Irritating to skin.
Eyes	: Irritating to eyes.

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Isobutane	-	-	-	None.	-	-

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Species	Exposure	Result
Heptane	-	Fish	96 hours	Acute LC50 4924000 ug/L
	-	Fish	96 hours	Acute LC50 375000 ug/L

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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. Do not puncture or incinerate container.





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.



14 . Transport information

AERG : 126

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	Not applicable.	Consumer commodity	ORM-D	-		-
TDG Classification	UN1950	Aerosols, flammable, N.O.S. (each not exceeding 1 L capacity)	2.1	-		-
Mexico Classification	UN1950	Aerosols, flammable, N.O.S. (each not exceeding 1 L capacity)	2.1	-		-
IMDG Class	UN1950	Aerosols, flammable, N.O.S. (each not exceeding 1 L capacity)	2.1	-		-
IATA-DGR Class	UN1950	Aerosols, flammable, N.O.S. (each not exceeding 1 L capacity)	2.1	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Compressed gas
Flammable aerosol
Irritating material
Target organ effects

U.S. Federal regulations : TSCA 4(a) final test rules: Polytetrafluoroethylene; Heptane
TSCA 8(a) PAIR: Heptane
United States inventory (TSCA 8b): All components are listed or exempted.
TSCA 12(b) one-time export: Polytetrafluoroethylene; Heptane
TSCA 12(b) annual export notification: Polytetrafluoroethylene

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: Isobutane; Heptane

SARA 311/312 MSDS distribution - chemical inventory - hazard identification

Isobutane: Fire hazard, Sudden release of pressure; Heptane: Fire hazard

Clean Water Act (CWA) 307: Zinc oxide

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention Isobutane

Clean Air Act (CAA) 112 regulated flammable substances Isobutane

Clean Air Act (CAA) 112 regulated toxic substances No products were found.

15 . Regulatory information

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:
ISOBUTANE;HEPTANE (N-HEPTANE)
- 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:
Isobutane;n-HEPTANE
- 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:** None of the components are listed.
- New York Toxic Chemical Release Reporting:** None of the components are listed.
- Pennsylvania RTK Hazardous Substances:** The following components are listed:
PROPANE, 2-METHYL-;HEPTANE
- Rhode Island Hazardous Substances:** None of the components are listed.

Canada

WHMIS (Canada)

- : Class A: Compressed gas.
- Class B-5: Flammable aerosol.
- Class D-2B: Material causing other toxic effects (Toxic).



Canadian lists

- : **CEPA Toxic substances:** None of the components are listed.
- Canadian ARET:** None of the components are listed.
- Canadian NPRI:** The following components are listed: Butane;Heptane
- 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.

Canada inventory

- : **Canada inventory:** All components are listed or exempted.

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.

Mexico

Classification

:



15 . Regulatory information

International regulations

International lists : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements : FLAMMABLE. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. HIGH PRESSURE GAS.

Hazardous Material Information System (U.S.A.) :

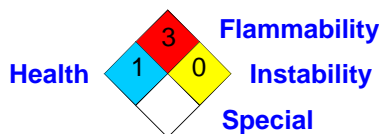
HAZARD RATINGS

Health	*	1
Fire hazard		3
Physical Hazard		0
Personal protection		B

4- Extreme
3- Serious
2- Moderate
1- Slight
0- Minimal
See section 8 for more detailed information on personal protection.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



References : ANSI Z400.5, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG. - Canada Gazette Part II, Vol. 122, No. 2. Registration SOR/88-64, 31 December 1987. Hazardous Products Act "Ingredient Disclosure List" - Canadian Transport of Dangerous Goods, Regulations and Schedules, Clear Language version 2005. - Official Mexican Standards NOM-018-STPS-2000 and NOM-004-SCT2-1994.

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.