

# SAFETY DATA SHEET

## Liquid X

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### Identification of the substance or preparation

**Product name** : Liquid X

**Product type** : Aerosol.

**Use of the substance/preparation** : Bicycle lubricant.

**Supplier/Manufacturer** : Pedro's Incorporated  
600 Research Drive  
Wilmington, Massachusetts 01887

**e-mail address of person responsible for this SDS** : msds@pedros.com

**Emergency telephone number (with hours of operation)** : CHEMTREC International: (703) 527-3887  
24/7

### 2. HAZARDS IDENTIFICATION

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

**Classification** : R67  
N; R51/53

**Human health hazards** : Vapours may cause drowsiness and dizziness.

**Environmental hazards** : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See section 11 for more detailed information on health effects and symptoms.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance/preparation** : Preparation

Ingredient name	CAS number	%	EC number	Classification
<b>Europe/Luxembourg</b>				
isobutane	75-28-5	30 - 60	200-857-2	F+; R12 [2]
Heptane	142-82-5	10 - 30	205-563-8	F; R11 [1] [2] Xn; R65 Xi; R38 R67 N; R50/53
<b>See section 16 for the full text of the R-phrases declared above</b>				
<b>Sweden</b>				
Heptane	142-82-5	15-20	205-563-8	F; R11 [1] [2] Xn; R65 Xi; R38 R67 N; R50/53
<b>See section 16 for the full text of the R-phrases declared above</b>				
<b>Denmark</b>				
isobutane	75-28-5	30 - 60	200-857-2	F+; R12
Heptane	142-82-5	10 - 30	205-563-8	F; R11 [1] [2] Xn; R65 Xi; R38 R67 N; R50/53
<b>See section 16 for the full text of the R-phrases declared above</b>				
<b>Norway</b>				

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p>See section 16 for the full text of the R-phrases declared above</p> <p><b>France</b></p>					
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p>See section 16 for the full text of the R-phrases declared above</p> <p><b>Netherlands</b></p>					
Heptane	142-82-5	15-20	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p>See section 16 for the full text of the R-phrases declared above</p> <p><b>Germany</b></p>					
isobutane	75-28-5	30 - 60	200-857-2	F+; R12	[2]
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p>See section 16 for the full text of the R-phrases declared above</p> <p><b>Finland</b></p>					
isobutane	75-28-5	50-75	200-857-2	F+; R12	[2]
Heptane	142-82-5	15-20	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p>See section 16 for the full text of the R-phrases declared above</p> <p><b>United Kingdom (UK)</b></p>					
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p>See section 16 for the full text of the R-phrases declared above</p> <p><b>Austria</b></p>					
isobutane	75-28-5	30 - 60	200-857-2	F+; R12	[2]
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

See section 16 for the full text of the R-phrases declared above					
<b>Switzerland</b>					
isobutane	75-28-5	30 - 60	200-857-2	F+; R12	[2]
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
See section 16 for the full text of the R-phrases declared above					
<b>Belgium</b>					
isobutane	75-28-5	30 - 60	200-857-2	F+; R12	[2]
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
See section 16 for the full text of the R-phrases declared above					
<b>Spain</b>					
isobutane	75-28-5	30 - 60	200-857-2	F+; R12	[2]
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
See section 16 for the full text of the R-phrases declared above					
<b>Czech Republic</b>					
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
See section 16 for the full text of the R-phrases declared above					
<b>Italy</b>					
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
See section 16 for the full text of the R-phrases declared above					
<b>Estonia</b>					
isobutane	75-28-5	30 - 60	200-857-2	F+; R12	[2]
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
See section 16 for the full text of the R-phrases declared above					
<b>Poland</b>					

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p><b>See section 16 for the full text of the R-phrases declared above</b></p> <p><b>Slovenia</b></p>					
isobutane	75-28-5	30 - 60	200-857-2	F+; R12	[2]
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p><b>See section 16 for the full text of the R-phrases declared above</b></p> <p><b>Latvia</b></p>					
isobutane	75-28-5	30 - 60	200-857-2	F+; R12	[2]
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p><b>See section 16 for the full text of the R-phrases declared above</b></p> <p><b>Greece</b></p>					
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p><b>See section 16 for the full text of the R-phrases declared above</b></p> <p><b>Portugal</b></p>					
isobutane	75-28-5	30 - 60	200-857-2	F+; R12	[2]
Heptane	142-82-5	10 - 30	205-563-8	F; R11 Xn; R65 Xi; R38 R67 N; R50/53	[1] [2]
<p><b>See section 16 for the full text of the R-phrases declared above</b></p>					

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in section 8.

### 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. Obtain medical attention if symptoms occur.
- Skin contact** : Wash with soap and water. Obtain medical attention if symptoms occur.
- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.

#### 4. FIRST AID MEASURES

- 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. 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.

See section 11 for more detailed information on health effects and symptoms.

#### 5. FIRE-FIGHTING MEASURES

##### Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : In a fire or if heated, a pressure increase will occur and the container may burst. Bursting aerosol containers may be propelled from a fire at high speed.
- 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. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- 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 pressurised 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 spilt material. Avoid breathing vapour 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 spilt 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). Water polluting material. May be harmful to the environment if released in large quantities.
- 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. Dispose of via a licensed waste disposal contractor
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the 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 spilt 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. Pressurised container: protect from sunlight and do not expose to temperature exceeding 50°C. Do not pierce or burn, even after use. Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Avoid release to the environment. Refer to special instructions/safety data sheet. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Empty containers retain product residue and can be hazardous.
- Storage** : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Use appropriate containment to avoid environmental contamination.
- Packaging materials**
- Recommended** : Use original container.
- Czech Republic - Storage code** : I

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure limit values

Ingredient name	Occupational exposure limits
<b>Europe/Luxembourg</b>	
isobutane	<b>ACGIH TLV (United States, 1/2007).</b> TWA: 1000 ppm 8 hour(s).
Heptane	<b>EU OEL (Europe, 5/2006).</b> limit value 8 hours: 2085 mg/m <sup>3</sup> 8 hour(s). limit value 8 hours: 500 ppm 8 hour(s).
<b>Sweden</b>	
Heptane	<b>AFS 2005:17 (Sweden, 6/2007).</b> STEL: 1200 mg/m <sup>3</sup> 15 minute(s). STEL: 300 ppm 15 minute(s). TWA: 800 mg/m <sup>3</sup> 8 hour(s). TWA: 200 ppm 8 hour(s).
<b>Denmark</b>	
Heptane	<b>Arbejdstilsynet (Denmark, 8/2007).</b> TWA: 820 mg/m <sup>3</sup> 8 hour(s). TWA: 200 ppm 8 hour(s).
<b>Norway</b>	
Heptane	<b>Arbejdstilsynet (Norway, 6/2007).</b> TWA: 800 mg/m <sup>3</sup> 8 hour(s). TWA: 200 ppm 8 hour(s).
<b>France</b>	
Heptane	<b>INRS (France, 6/2006).</b> TWA: 2085 mg/m <sup>3</sup> 8 hour(s). TWA: 500 ppm 8 hour(s).
<b>Netherlands</b>	
Heptane	<b>Nationale MAC-lijst (Netherlands, 10/2007).</b> MAC-TGG, 15 min.: 1600 mg/m <sup>3</sup> 15 minute(s). MAC-TGG, 8 uur: 1200 mg/m <sup>3</sup> 8 hour(s).
<b>Germany</b>	
isobutane	<b>MAK-Werte Liste (Germany, 7/2007).</b> PEAK: 9600 mg/m <sup>3</sup> , 4 times per shift, 15 minute(s). PEAK: 4000 ppm, 4 times per shift, 15 minute(s). TWA: 2400 mg/m <sup>3</sup> 8 hour(s). TWA: 1000 ppm 8 hour(s). <b>TRGS900 AGW (Germany, 3/2007).</b> PEAK: 9600 mg/m <sup>3</sup> 15 minute(s). PEAK: 4000 ppm 15 minute(s).

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<p>Heptane</p>	<p>TWA: 2400 mg/m<sup>3</sup> 8 hour(s).  TWA: 1000 ppm 8 hour(s).  <b>TRGS900 AGW (Germany, 3/2007).</b>  PEAK: 2100 mg/m<sup>3</sup> 15 minute(s).  PEAK: 500 ppm 15 minute(s).  TWA: 2100 mg/m<sup>3</sup> 8 hour(s).  TWA: 500 ppm 8 hour(s).  <b>MAK-Werte Liste (Germany, 7/2007).</b>  TWA: 500 ppm 8 hour(s).  PEAK: 500 ppm, 4 times per shift, 15 minute(s).  TWA: 2100 mg/m<sup>3</sup> 8 hour(s).  PEAK: 2100 mg/m<sup>3</sup>, 4 times per shift, 15 minute(s).</p>
<p><b>Finland</b> isobutane</p>	<p><b>Työterveyslaitos, Sosiaali- ja terveysministeriö (Finland, 8/2007).</b>  STEL: 2400 mg/m<sup>3</sup> 15 minute(s).  STEL: 1000 ppm 15 minute(s).  TWA: 1900 mg/m<sup>3</sup> 8 hour(s).  TWA: 800 ppm 8 hour(s).</p>
<p>Heptane</p>	<p><b>Työterveyslaitos, Sosiaali- ja terveysministeriö (Finland, 8/2007).</b>  STEL: 2100 mg/m<sup>3</sup> 15 minute(s).  STEL: 500 ppm 15 minute(s).  TWA: 1200 mg/m<sup>3</sup> 8 hour(s).  TWA: 300 ppm 8 hour(s).</p>
<p><b>United Kingdom (UK)</b> Heptane</p>	<p><b>EH40/2005 WELs (United Kingdom (UK), 8/2007).</b>  TWA: 500 ppm 8 hour(s).</p>
<p><b>Austria</b> isobutane</p>	<p><b>GKV_MAK (Austria, 9/2007).</b>  PEAK: 3800 mg/m<sup>3</sup>, 3 times per shift, 60 minute(s).  PEAK: 1600 ppm, 3 times per shift, 60 minute(s).  TWA: 1900 mg/m<sup>3</sup> 8 hour(s).  TWA: 800 ppm 8 hour(s).</p>
<p>Heptane</p>	<p><b>GKV_MAK (Austria, 9/2007).</b>  STEL: 8000 mg/m<sup>3</sup>, 4 times per shift, 15 minute(s).  STEL: 2000 ppm, 4 times per shift, 15 minute(s).  TWA: 2000 mg/m<sup>3</sup> 8 hour(s).  TWA: 500 ppm 8 hour(s).</p>
<p><b>Switzerland</b> isobutane</p>	<p><b>SUVA (Switzerland, 1/2007).</b>  TWA: 1900 mg/m<sup>3</sup> 8 hour(s).  TWA: 800 ppm 8 hour(s).</p>
<p>Heptane</p>	<p><b>SUVA (Switzerland, 1/2007).</b>  STEL: 1600 mg/m<sup>3</sup> 15 minute(s).  STEL: 400 ppm 15 minute(s).  TWA: 1600 mg/m<sup>3</sup> 8 hour(s).  TWA: 400 ppm 8 hour(s).</p>
<p><b>Belgium</b> isobutane</p>	<p><b>Lijst Grenswaarden / Valeurs Limites (Belgium, 6/2007).</b>  TWA: 1000 ppm 8 hour(s).</p>
<p>Heptane</p>	<p><b>Lijst Grenswaarden / Valeurs Limites (Belgium, 6/2007).</b>  STEL: 2085 mg/m<sup>3</sup> 15 minute(s).  STEL: 500 ppm 15 minute(s).  TWA: 1664 mg/m<sup>3</sup> 8 hour(s).  TWA: 400 ppm 8 hour(s).</p>
<p><b>Spain</b> isobutane</p>	<p><b>INSHT (Spain, 1/2007).</b>  TWA: 1000 ppm 8 hour(s).</p>
<p>Heptane</p>	<p><b>INSHT (Spain, 1/2007).</b>  TWA: 2085 mg/m<sup>3</sup> 8 hour(s).  TWA: 500 ppm 8 hour(s).</p>

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Czech Republic

Heptane **178/2001 (Czech Republic, 6/2004).**  
 TWA: 2000 mg/m<sup>3</sup> 8 hour(s).  
 TWA: 488 ppm 8 hour(s).

### Italy

Heptane **Ministero della Salute (Italy, 3/2004).**  
 TWA: 2085 mg/m<sup>3</sup> 8 hour(s).  
 TWA: 500 ppm 8 hour(s).

### Estonia

isobutane **Sotsiaalminister (Estonia, 10/2007).**  
 TWA: 1900 mg/m<sup>3</sup> 8 hour(s).  
 TWA: 800 ppm 8 hour(s).

Heptane

**EU OEL (Europe, 5/2006).**  
 limit value 8 hours: 2085 mg/m<sup>3</sup> 8 hour(s).  
 limit value 8 hours: 500 ppm 8 hour(s).

### Poland

Heptane **Ministra Pracy i Polityki Społecznej (Poland, 9/2007).**  
 STEL: 2000 mg/m<sup>3</sup> 15 minute(s).  
 TWA: 1200 mg/m<sup>3</sup> 8 hour(s).

### Slovenia

isobutane **Uradni list Republike Slovenije (Slovenia, 6/2007).**  
 TWA: 2400 mg/m<sup>3</sup> 8 hour(s).  
 TWA: 1000 ppm 8 hour(s).

Heptane

**Uradni list Republike Slovenije (Slovenia, 6/2007).**  
 TWA: 2085 mg/m<sup>3</sup> 8 hour(s).  
 TWA: 500 ppm 8 hour(s).

### Latvia

isobutane **LV Nat. Standardisation and Meterological Centre (Latvia, 5/2007).**  
 STEL: 300 mg/m<sup>3</sup>, (C) 15 minute(s).  
 TWA: 100 mg/m<sup>3</sup>, (C) 8 hour(s).

Heptane

**LV Nat. Standardisation and Meterological Centre (Latvia, 5/2007).**  
 TWA: 350 mg/m<sup>3</sup> 8 hour(s).  
 TWA: 85 ppm 8 hour(s).  
 STEL: 500 ppm 15 minute(s).  
 STEL: 2085 mg/m<sup>3</sup> 15 minute(s).

### Greece

Heptane **PD 90/1999 (Greece, 8/2007).**  
 STEL: 2000 mg/m<sup>3</sup> 15 minute(s).  
 STEL: 500 ppm 15 minute(s).  
 TWA: 2000 mg/m<sup>3</sup> 8 hour(s).  
 TWA: 500 ppm 8 hour(s).

### Portugal

isobutane **Instituto Português da Qualidade (Portugal, 3/2007).**  
 TWA: 1000 ppm 8 hour(s).  
 TWA: 1000 ppm 8 hour(s). Form: gas

Heptane

**Instituto Português da Qualidade (Portugal, 3/2007).**  
 STEL: 500 ppm 15 minute(s).  
 TWA: 400 ppm 8 hour(s).

**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. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

### Exposure controls

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Occupational exposure controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Respiratory protection** : 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.
- Hand protection** : 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.
- Eye protection** : 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, gases or dusts.
- Skin protection** : 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.



- Hygiene measures** : Wash hands, forearms and face thoroughly after handling compounds and before eating, smoking and using the lavatory and at the end of the day. Follow good industrial hygiene practice.
- 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.
- Protection based on MAL** : **According to the regulations on work involving coded products, the following stipulations apply to the use of personal protective equipment:**

**General:** Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. A face shield must be worn in work involving spattering if a full mask is not required. In this case, other recommended use of eye protection is not required.

In all spraying operations in which there is return spray, the following must be worn: respiratory protection and arm protectors/apron/coveralls/protective clothing as appropriate or as instructed.

MAL-code: 1-6

**Application:** When using scraper or knife, brush, roller etc. for pre- and post-treatments in a spray booth where the operator is outside the spray zone and when working in similar new\* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone. When spraying in new\* booths and cabins with non-atomizing guns. When using scraper or knife, brush, roller, etc. for pre- and post-treatments in cabins or booths of the existing\* facility type, if the operator is inside the spray zone. When using scraper or knife, brush, roller, etc. for pre- and post-treatments outside a closed facility, spray booth or spray cabin.

- Protective clothing must be worn.

During downtimes, cleaning and repair in closed facilities, spray booths or cabins, if there is a risk of contact with wet paint or organic solvents.

- Gas filter mask and protective clothing must be worn.

When spraying in existing\* spray booths, if the operator is outside the spray zone.

- Air-supplied full mask and protective clothing must be worn.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

During non-atomising spraying in existing\* facilities of the combined-cabin, spray-cabin and spray-booth type where the operator is working inside the spray zone.

- Air-supplied half mask, protective clothing and eye protection must be worn.

During all spraying where atomisation occurs in cabins or spray booths where the operator is inside the spray zone and during spraying outside a closed facility, cabin or booth.

- Air-supplied full mask, protective clothing and hood must be worn.

**Drying:** Items for drying/drying ovens that are temporarily placed on such things as rack trolleys, etc, must be equipped with a mechanical exhaust system to prevent fumes from wet items from passing through workers' inhalation zone.

**Polishing:** When polishing treated surfaces, a mask with dust filter must be worn. When machine grinding, eye protection must be worn. Work gloves must always be worn.

**Caution** The regulations contain other stipulations in addition to the above.

\*See Regulations.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### General information

#### Appearance

#### Physical state

: Liquid. [Opaque.]

#### Colour

: Beige.

#### Odour

: Solvent.

#### Odour threshold

: Not available.

## 10. STABILITY AND REACTIVITY

### Stability

: The product is stable. Under normal conditions of storage and use, hazardous polymerisation will not occur.

### Conditions to avoid

: Avoid release to the environment. Refer to special instructions/safety data sheet.

### 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.

## 11. TOXICOLOGICAL INFORMATION

### Potential acute health effects

#### Inhalation

: Vapours may cause drowsiness and dizziness.

#### Ingestion

: No known significant effects or critical hazards.

#### Skin contact

: No known significant effects or critical hazards.

#### Eye contact

: No known significant effects or critical hazards.

### Potential chronic health effects

#### Reproductive toxicity

## 11. TOXICOLOGICAL INFORMATION

Product name	List name	Classification
<b>Finland</b> isobutane	Finland Occupational Exposure Limits	Carc. Group 3
<b>Slovenia</b> isobutane	Slovenia Carcinogen, Mutagen, Reprotoxic chemicals	Carc.1, Muta. MUTA2

- Chronic effects** : No known significant effects or critical hazards.
- 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.
- Over-exposure signs/symptoms**
- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
respiratory tract irritation  
coughing  
headache  
drowsiness/fatigue  
dizziness/vertigo
- Ingestion** : No specific data.
- Skin** : No specific data.
- Eyes** : Adverse symptoms may include the following:  
irritation  
redness
- Target organs** : Contains material which causes damage to the following organs: upper respiratory tract, skin, central nervous system (CNS).

## 12. ECOLOGICAL INFORMATION

- Environmental effects** : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
  - Aquatic ecotoxicity**
- | Product/ingredient name | Test / Type             | Species | Dose | Exposure |
|-------------------------|-------------------------|---------|------|----------|
| Heptane                 | Acute LC50 4924000 ug/L | Fish    | -    | 96 hours |
|                         | Acute LC50 375000 ug/L  | Fish    | -    | 96 hours |
- Other adverse effects** : No known significant effects or critical hazards.
  - AOX** : The product does not contain organically bound halogens which could lead to an AOX value in waste water.

## 13. DISPOSAL CONSIDERATIONS

- Methods of disposal** : The generation of waste should be avoided or minimised 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.
- Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.
- Denmark – Carcinogenic waste** : Waste containers must be labeled: Contains a substance or substances regulated by Danish working environment legislation on cancer risks.
- Norway - Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

## 14. TRANSPORT INFORMATION

### International transport regulations

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
<b>ADR/RID Class</b>	UN1950	Aerosols, flammable, N.O.S. (each not exceeding 1 L capacity)	2	-		-
<b>ADNR Class</b>	UN1950	Aerosols, flammable, N.O.S. (each not exceeding 1 L capacity)	2	-		-
<b>IMDG Class</b>	UN1950	Aerosols, flammable, N.O.S. (each not exceeding 1 L capacity)	2.1	-		-
<b>IATA Class</b>	UN1950	Aerosols, flammable, N.O.S. (each not exceeding 1 L capacity)	2.1	-		-

PG\* : Packing group

## 15. REGULATORY INFORMATION

### EU regulations

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

**Hazard symbol or symbols :**

Dangerous for the environment

**Risk phrases :** R67- Vapours may cause drowsiness and dizziness.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety phrases :** S2- Keep out of the reach of children.  
S29- Do not empty into drains.  
S46- If swallowed, seek medical advice immediately and show this container or label.  
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

**Product use :** Consumer applications, Industrial applications.

**Europe inventory :** **Europe inventory:** All components are listed or exempted.

### Other EU regulations

**Additional warning phrases :** Pressurised container: protect from sunlight and do not expose to temperature exceeding 50°C. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking. Keep out of the reach of children.

### National regulations



#### Denmark

**Hazard symbol or symbols :**

Dangerous for the environment

**Risk phrases :** R67- Vapours may cause drowsiness and dizziness.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**15. REGULATORY INFORMATION**

<b>Safety phrases</b>	: S2- Keep out of the reach of children. S29- Do not empty into drains. S46- If swallowed, seek medical advice immediately and show this container or label. S61- Avoid release to the environment. Refer to special instructions/safety data sheet.
<b>Additional warning phrases</b>	: Pressurised container: protect from sunlight and do not expose to temperature exceeding 50°C. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking. Keep out of the reach of children.
<b>MAL-code</b>	: 1-6
<b>Statutory Order 517 on Aerosols</b>	: Retail or industrial use.
<b>Norway</b>	
<b>Hazard symbol or symbols</b>	: 
	Dangerous for the environment
<b>Risk phrases</b>	: R67- Vapours may cause drowsiness and dizziness. R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
<b>Safety phrases</b>	: S2- Keep out of the reach of children. S29- Do not empty into drains. S46- If swallowed, seek medical advice immediately and show this container or label. S61- Avoid release to the environment. Refer to special instructions/safety data sheet.
<b>Carcinogenic class</b>	: Not classified.
<b>France</b>	
<b>Social Security Code, Articles L 461-1 to L 461-7</b>	: Heptane 84
<b>Germany</b>	
<b>Hazardous incident ordinance</b>	: Applicable. Category: 9b Dangerous for the environment.
<b>Hazard class for water</b>	: 3 Appendix No. 4
<b>Austria</b>	
<b>Classification, packaging and labelling</b>	: 
<b>Limitation of the use of organic solvents</b>	: Permitted.
<b>Switzerland</b>	
<b>Poison class</b>	: Not regulated
<b>BAG T</b>	: 619000
<b>VOC content</b>	: VOC (w/w): 76.2%
<b>Italy</b>	
<b>Emission control directive</b>	: 77.2285% Not classified.

**16. OTHER INFORMATION**

- Full text of R-phrases referred to in sections 2 and 3 - Europe / Luxembourg** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Europe / Luxembourg** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Sweden** : R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Sweden** : F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Denmark** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Denmark** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Norway** : R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Norway** : F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - France** : R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**16. OTHER INFORMATION**

- Full text of classifications referred to in sections 2 and 3 - France** : F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Netherlands** : R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Netherlands** : F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Germany** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Germany** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Finland** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Finland** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - United Kingdom (UK)** : R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - United Kingdom (UK)** : F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment

**16. OTHER INFORMATION**

- Full text of R-phrases referred to in sections 2 and 3 - Austria** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Austria** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Switzerland** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Switzerland** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Belgium** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Belgium** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Spain** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Spain** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment

**16. OTHER INFORMATION**

- Full text of R-phrases referred to in sections 2 and 3 - Czech Republic** : R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Czech Republic** : F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Italy** : R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Italy** : F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Estonia** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Estonia** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Poland** : R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Poland** : F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Slovenia** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**16. OTHER INFORMATION**

- Full text of classifications referred to in sections 2 and 3 - Slovenia** : F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Latvia** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Latvia** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Greece** : R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Greece** : F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- Full text of R-phrases referred to in sections 2 and 3 - Portugal** : R12- Extremely flammable.  
R11- Highly flammable.  
R65- Harmful: may cause lung damage if swallowed.  
R38- Irritating to skin.  
R67- Vapours may cause drowsiness and dizziness.  
R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- Full text of classifications referred to in sections 2 and 3 - Portugal** : F+ - Extremely flammable  
F - Highly flammable  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment
- History**
- Date of issue** : 06/30/2008
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