MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Material name **LPS® PreSolve (Aerosol)**

Recommended use A solvent degreasing agent designed for removing tar, adhesives, grease, oil and other residues from metal and other hard surfaces.

Version # 01

CAS # Mixture

Part Number 01420

Manufacturer

Supplier Name Y K Toh Marketing Pte Ltd

Address 8, Changi North Street 1, TSK Building
TSK Building Singapore 498829
Tel: +65-6542 3232
Fax: +65-6542 3636

In Case of Emergency +001 703-527-3887

Manufacturer

Company name LPS Laboratories, a division of Illinois Tool Works, Inc.

Address 4647 Hugh Howell Rd., Tucker, GA 30084 (U.S.A.)

Website http://www.lpslabs.com

E-mail sds@lpslabs.com

2. HAZARDS IDENTIFICATION

Classification F+;R12, Xi;R36/38, R43, N;R51/53

Risk phrase(s)
R12 Extremely flammable.
R36/38 Irritating to eyes and skin.
R43 May cause sensitization by skin contact.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrase(s)
S7/9 Keep container tightly closed and in a well-ventilated place.
S16 Keep away from sources of ignition - No smoking.
S23 Do not breathe gas/fumes/vapor/spray.
S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36/37 Wear suitable protective clothing and gloves.
S57 Use appropriate container to avoid environmental contamination.
S60 This material and its container must be disposed of as hazardous waste.
S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS #	Percent
Distillates Petroleum Hydrotreated Light	64742-47-8	> 60
3-Methoxy-3-methyl-1-butanol (MMB)	56539-66-3	10 - < 30
d-limonene	5989-27-5	10 - < 30
Carbon Dioxide	124-38-9	< 10

4. FIRST AID MEASURES

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops and persists.

Eye contact Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation develops and persists.

Ingestion Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

General advice	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
Notes to physician	Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim under observation. Symptoms may be delayed.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO2).
Extinguishing media which must not be used for safety reasons	Do not use water jet as an extinguisher, as this will spread the fire.
Unusual fire & explosion hazards	Pressurized container may explode when exposed to heat or flame.
Specific hazards	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Special protective equipment for fire-fighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Structural firefighters protective clothing will only provide limited protection.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
HAZCHEM code	None.
General fire hazards	Extremely flammable aerosol.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Keep unnecessary personnel away. Keep out of low areas. Keep upwind. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the MSDS.
Environmental precautions	Avoid release to the environment. Refer to special instructions/safety data sheets. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.
Containment procedures	Refer to attached safety data sheets and/or instructions for use. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Use water spray to reduce vapors or divert vapor cloud drift. Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Extinguish all flames in the vicinity. Should not be released into the environment. Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Do not allow material to contaminate ground water system. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. For waste disposal, see section 13 of the MSDS.

7. HANDLING AND STORAGE

Handling	May be ignited by open flame. Keep away from sources of ignition - No smoking. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Avoid contact with eyes. Avoid prolonged exposure. Use appropriate container to avoid environmental contamination.
Storage	Contents under pressure. Do not handle or store near an open flame, heat or other sources of ignition. Use appropriate container to avoid environmental contamination. Store in a well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm

Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A)

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
	TWA	22500 mg/m3
		12500 ppm

Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
	TWA	22500 mg/m3
		12500 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures

Additional exposure data Not available.

Engineering measures to reduce exposure Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Respiratory protection No personal respiratory protective equipment normally required. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection Chemical resistant gloves are recommended.

Eye protection Wear safety glasses with side shields (or goggles). Eye wash fountain is recommended.

Skin and body protection Avoid contact with clothing. Wear suitable protective clothing. Chemical resistant gloves.

General Use personal protective equipment as required.

Environmental exposure controls Environmental manager must be informed of all major releases.

Hygiene measures When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state Gas.

Form Aerosol.

Color Clear, Off-white.

Odor Orange

Odor threshold Not established

pH Not applicable

Vapor pressure < 5 mm Hg @ 20°C

Vapor density > 1 (air = 1)

Boiling point > 302 °F (> 150 °C)

Melting point/Freezing point Not established

Solubility (water) < 15 %

Specific gravity 0.82 - 0.86 @ 20°C

Flash point 104.0 °F (40.0 °C) Tag Closed Cup

Flammability limits in air, upper, % by volume 6 %

Flammability limits in air, lower, % by volume 0.7 %

Auto-ignition temperature > 392 °F (> 200 °C)

VOC 97.2 % per U.S. State and Federal Consumer Product Regulations

Evaporation rate > 0.1 BuAc

Viscosity	< 3 cSt @ 25°C
Percent volatile	100 %
Partition coefficient (n-octanol/water)	Not established
Other data	
Decomposition temperature	Not established
Heat of combustion	> 30 kJ/g

10. STABILITY AND REACTIVITY

Chemical stability	Risk of ignition.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
Materials to avoid	Strong oxidizing agents.
Hazardous decomposition products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological data

Components	Species	Test Results
Distillates Petroleum Hydrotreated Light (CAS 64742-47-8)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Cat	> 6.4 mg/l
	Rat	> 0.1 mg/l
Oral		
LD50	Rat	> 5000 mg/kg
d-limonene (CAS 5989-27-5)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Mouse	5600 - 6600 mg/kg
	Rat	> 2000 mg/kg
Other		
LD50	Mouse	1.3 g/kg
	Rat	0.11 g/kg

* Estimates for product may be based on additional component data not shown.

Acute toxicity	Based on available data, the classification criteria are not met.
Routes of exposure	Inhalation. Skin contact. Eye contact.
Chronic toxicity	Prolonged exposure may cause chronic effects.
Sensitization	May cause sensitization by skin contact.
Carcinogenicity	Based on available data, the classification criteria are not met.
IARC Monographs. Overall Evaluation of Carcinogenicity	
d-limonene (CAS 5989-27-5)	3 Not classifiable as to carcinogenicity to humans.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductivity	Based on available data, the classification criteria are not met.
Epidemiology	No epidemiological data is available for this product.
Local effects	Irritating to eyes and skin. May cause sensitization by skin contact. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Symptoms and target organs	Irritant effects. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Defatting of the skin. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

12. ECOLOGICAL INFORMATION

Ecotoxicological data

Components		Species	Test Results
Distillates Petroleum Hydrotreated Light (CAS 64742-47-8)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.9 mg/l, 96 hours
d-limonene (CAS 5989-27-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	69.6 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.619 - 0.796 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Ecotoxicity Toxic to aquatic life with long lasting effects.

Persistence and degradability Not inherently biodegradable.

Mobility Readily absorbed into soil. The product is immiscible with water and will spread on the water surface.

Bioaccumulation

Bioaccumulative potential

Octanol/water partition coefficient log Kow

d-limonene	4.232

Environmental effects Toxic to aquatic organisms.

Aquatic toxicity Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities. Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. After recovery of solvent dispose of residue as hazardous waste. Dispose in accordance with all applicable regulations.

Waste from residues / unused products Dispose of in accordance with local regulations. Avoid discharge into water courses or onto the ground.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADG

UN number UN1950
UN proper shipping name Aerosols, flammable
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Packing group Not applicable.
Environmental hazards No
Hazchem code 2YE
Special precautions for user Not available.

IATA

UN number UN1950
UN proper shipping name Aerosols, flammable
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Label(s) 2.1
Packing group Not applicable.
Environmental hazards No.
Special precautions for user Not available.
Other information
Passenger and cargo aircraft Allowed.
Cargo aircraft only Allowed.

IMDG

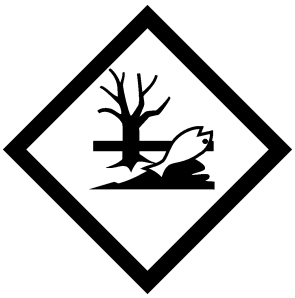
UN number UN1950

UN proper shipping name	Aerosols, flammable, MARINE POLLUTANT
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
EmS	F-D, S-U
Special precautions for user	Not available.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

ADG

IATA; IMDG

Marine pollutant



15. REGULATORY INFORMATION

National regulations This Material Safety Data Sheet was prepared in accordance with the Australia National Code of Practice for the Preparation of Material Safety Data Sheets (NOHSC: 2011.) No poison schedule number allocated.

Australia HVIC: Listed substance

Carbon Dioxide (CAS 124-38-9)	Listed.
Distillates Petroleum Hydrotreated Light (CAS 64742-47-8)	Listed.

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. OTHER INFORMATION

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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