



CHEMICAL PRODUCT SAFETY DATA SHEET

Prepared in accordance with GB/T 16483 and GB/T 17519.

Company name: CRC Industries Trading (Shanghai) Co., Ltd. Product name: Dry PTFE Lube

Issue date: 06-27-2016

Version #: 01

SDS No: -

1. Chemical product and company identification

Product name	Dry PTFE Lube
Product code	PR03044
Company name	CRC Industries Trading (Shanghai) Co., Ltd.
Address	Room 2408, No. 488 South Wuning Road Jingan District - 200042 Shanghai, PR China
Telephone	
General Information	+86 (0) 21 6236 6035
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Website	www.crcindustries.cn

Recommended use and Limitations on use

Recommended use	Dry film lubricant
Issue date	06-27-2016

2. Hazards identification

Emergency overview	Aerosol. CONTENTS UNDER PRESSURE. Pressurized container may explode when exposed to heat or flame. May be fatal if swallowed and enters airways. May cause damage to organs through prolonged or repeated exposure. May cause drowsiness and dizziness. Causes serious eye irritation. Causes skin irritation. Possible reproductive hazard. Dangerous for the environment if discharged into watercourses.
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GHS-classification

Physical hazards	Aerosols	Category 1
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2
	Reproductive toxicity (fertility, the unborn child)	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure (inhalation)	Category 2 (nervous system)
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3 (1.1 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.)
	Hazardous to the aquatic environment, long-term hazard	Category 3 (1.1 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.)
Other hazards which do not result in classification	Not classified.	

Label elements

Pictograms



GHS-labeling

Signal word	Danger
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Hazard statement	Extremely flammable aerosol. Pressurized container: May burst if heated. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. Suspected of damaging fertility or the unborn child. May cause damage to organs (nervous system) by inhalation. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe mist or vapor. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Avoid release to the environment.
Response	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Disposal	Dispose of contents/container in accordance with local/regional/national regulations.
Physical and chemical hazards	Extremely flammable aerosol. The product is stable and non-reactive under normal conditions of use, storage and transport.
Health hazards	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia. May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Causes serious eye irritation.
Environmental hazards	Harmful to aquatic life with long lasting effects.
Supplemental information	1.1% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 1.1% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. Composition/information on ingredients

Substance/mixture	Mixture	
Chemical name	CAS Number	Concentration (%)
liquefied petroleum gas	68476-86-8	40 - 50
isopropyl alcohol	67-63-0	20 - 30
naphtha (petroleum), hydrotreated light	64742-49-0	10 - 20
2-methylpentane	107-83-5	5 - 10
n-hexane	110-54-3	1 - 3
titanium tetrabutanolate	5593-70-4	1 - 3

4. First aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms and health effects	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.
Expected acute symptoms and delayed symptoms	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.

Personal protection for first-aid responders	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.
Notes to physician	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media	Alcohol resistant foam. Powder. Carbon dioxide (CO ₂).
Extinguishing media to avoid	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards	Contents under pressure. Pressurized container may rupture when exposed to heat or flame. During fire, gases hazardous to health may be formed.
Special fire fighting procedures	Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
Protection of fire-fighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
General fire hazards	Extremely flammable aerosol.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. In the event of fire and/or explosion do not breathe fumes.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
For emergency responders	Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Clean-up methods and materials and containment measures	Stop leak if you can do so without risk. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Prevent product from entering drains. Absorb in vermiculite, dry sand or earth and place into containers. 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. For waste disposal, see section 13 of the SDS.
Prevention of secondary hazards	Not available.

7. Handling and storage

Handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Do not re-use empty containers. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices. For product usage instructions, please see the product label.
Storage	Level 3 Aerosol. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Exposure limits

China OELs. Occupational Exposure Limits for Hazardous Agents in the Workplace, Chemical Hazardous Agents (GBZ 2.1-2007)

Components	Type	Value
isopropyl alcohol (CAS 67-63-0)	PC-STEL	700 mg/m ³
	PC-TWA	350 mg/m ³
n-hexane (CAS 110-54-3)	PC-STEL	180 mg/m ³
	PC-TWA	100 mg/m ³

Biological limit values

China. Biological limit values for occupational exposure (WS/T 110 to 115, 239 to 243, and 264 to 267)

Components	Value	Determinant	Specimen	Sampling Time
n-hexane (CAS 110-54-3)	4 mg/l	2,5-Hexanedione	Urine	*
	35 mmol/l	2,5-Hexanedione	Urine	*

* - For sampling details, please see the source document.

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
isopropyl alcohol (CAS 67-63-0)	40 mg/l	Acetone	Urine	*
n-hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedione, without hydrolysis	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

China OELs. Occupational Exposure Limits for Hazardous Agents in the Workplace, Chemical Hazardous Agents (GBZ 2.1-2007): Skin designation

N-HEXANE (CAS 110-54-3) Can be absorbed through the skin.

Control parameters

Follow standard monitoring procedures.

Engineering measures

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. Eye wash facilities and emergency shower should be available when handling this product.

Personal protective equipment

Respiratory protection

If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Hand protection

Wear protective gloves such as: Nitrile. Polyvinyl chloride (PVC). Viton®.

Eye protection

Wear safety glasses with side shields (or goggles).

Skin and body protection

Wear appropriate chemical resistant clothing.

Hygiene measures

Observe any medical surveillance requirements. 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 Liquid.

Form Aerosol.

Color Hazy white.

Odor Alcoholic.

pH Not available.

Melting point/freezing point -244.7 °F (-153.7 °C) estimated

Boiling point, initial boiling point, and boiling range	118.4 °F (48 °C) estimated
Flash point	< 20 °F (< -6.7 °C) Tag Closed Cup
Flammability limit - lower (%)	1 % estimated
Flammability limit - upper (%)	12 % estimated
Explosive limit - lower (%)	1 % estimated
Explosive limit - upper (%)	12 % estimated
Vapor pressure	2242.3 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	0.65 estimated
Density	Not available.
Solubility(ies)	
Solubility (water)	Negligible.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	437 °F (225 °C) estimated
Decomposition temperature	Not available.
Evaporation rate	Fast.
Flammability (solid, gas)	Not available.
Other data	
Percent volatile	97.8 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Isocyanates. Chlorine.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Acute toxicity	May be fatal if swallowed and enters airways. Narcotic effects.	
Product	Species	Test Results
Dry PTFE Lube		
<u>Acute</u>		
Dermal		
LD50	Rabbit	8058 mg/kg estimated
Inhalation		
LC50	Rat	41845 ppm, 4 hours estimated 72 mg/l, 4 hours estimated
Oral		
LD50	Rat	8747 mg/kg estimated
* Estimates for product may be based on additional component data not shown.		
Routes of exposure	Inhalation. Ingestion. Skin contact. Eye contact.	
Symptoms	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.	
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	This product is not expected to cause skin sensitization.	

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Toxic to reproduction	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity following single exposure	May cause drowsiness and dizziness.
Specific target organ toxicity following repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.
Chronic effects	May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicological data

Components	Species		Test Results
2-methylpentane (CAS 107-83-5)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Daphnia	1 - 10 mg/l, 48 hours
Fish	LC50	Fish	1 - 10 mg/l, 96 hours
isopropyl alcohol (CAS 67-63-0)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Water flea (Daphnia magna)	7550 - 13299 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	9640 mg/l, 96 hours
naphtha (petroleum), hydrotreated light (CAS 64742-49-0)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Daphnia	1 - 10 mg/l, 48 hours
Fish	LC50	Fish	1 - 10 mg/l, 96 hours
n-hexane (CAS 110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours

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

Ecotoxicity	Harmful to aquatic life with long lasting effects.
Persistence and degradability	No data is available on the degradability of this product.

Bioaccumulation

Bioaccumulative potential

Bioconcentration factor

isopropyl alcohol	3.16
naphtha (petroleum), hydrotreated light	10 - 25000

Octanol/water partition coefficient log Kow

2-methylpentane	3.74
isopropyl alcohol	0.05
n-hexane	3.9

Mobility in soil	This product is miscible in water.
Other hazardous effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Residual waste	Dispose of contents/container in accordance with local/regional/national/international regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Local disposal regulations Dispose in accordance with all applicable regulations. Contents under pressure. Do not puncture, incinerate or crush. Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

14. Transport information

CNDG

UN number UN1950
UN proper shipping name AEROSOLS
Transport hazard class(es)
Class 2
Subsidiary risk -
Packing group -

Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN1950
UN proper shipping name Aerosols, flammable, Limited Quantity
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Packing group Not applicable.
Environmental hazards No.
ERG Code 10L

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft Allowed with restrictions.
Cargo aircraft only Allowed with restrictions.

IMDG

UN number UN1950
UN proper shipping name AEROSOLS, LIMITED QUANTITY
Transport hazard class(es)
Class 2
Subsidiary risk -
Packing group Not applicable.
Environmental hazards
Marine pollutant No.
EmS Not available.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

CNDG; IATA; IMDG



15. Regulatory information

Inventory of Existing Chemical Substances in China

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	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).

Applicable regulations

This safety data sheet conforms to the following laws, regulations and standards:
Regulations on the Control over Safety of Dangerous Chemicals
Regulations on Labor Protection in Workplaces Where Toxic Products Are Used
Measures for the Safe Use of Chemicals in Workplaces
Safety Data Sheet for Chemical Products - Content and Order of Sections (GB/T 16483-2008)
General Rules for Preparation of Precautionary Labels for Chemicals (GB15258-2009)
Packing Symbol of Dangerous Goods(GB190-2009)
Packing - Pictorial Marking for Handling of Goods (GB/T191-2009)

General Rule For Classification and Hazard Communication of Chemicals (GB 13690-2009) and Catalog of Hazardous Chemicals

2-methylpentane (CAS 107-83-5)
isopropyl alcohol (CAS 67-63-0)
n-hexane (CAS 110-54-3)

Occupational exposure limits for hazardous agents in the workplace (GBZ 2.1-2007)

isopropyl alcohol (CAS 67-63-0)
n-hexane (CAS 110-54-3)

Restricted Import/Export Toxic Chemical List (MEP and GCA Announcement No. 2008-66, Dec. 1, 2008, amended through MEP and Customs Notice No. 2013-85, December 30, 2013)

Not regulated.

Identification of Major Hazard Installations for Hazardous Chemicals (GB18218-2009)

n-hexane (CAS 110-54-3)

Classification and code of dangerous goods (GB 6944-2012)

Regulated.

List of Dangerous Goods (GB 12268-2005)

Regulated.

The Principle of Classification of Transport Packaging Groups of Dangerous Goods (GB/T15098-2008)

Regulated.

General Specifications for Transport Packages of Dangerous Goods (GB 12463-2009)

Regulated.

Regulations on Road Transport of Dangerous Goods

Regulated.

Regulations on Rail Road Transport of Dangerous Goods

Regulated.

UN Recommendations on the Transport of Dangerous Goods (UN RTDG)

Regulated.

16. Other information**References**

EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

Further information

CRC # 670-670A

Disclaimer

CRC Industries Trading (Shanghai) Co., Ltd. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.