MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Material name **Bel-Ray Super Clean Chain Lube**

Product code 99470

SDS Number 6436

Recommended use Lubricant

Version No. 2.0

Revision date 22-June-2013

Manufacturer

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2. HAZARDS IDENTIFICATION

HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

Classification Repr. Cat. 3;R62, Xn;R48/20, Xi;R38, R67, N;R51/53

Risk phrase(s)
R38 Irritating to skin.
R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R62 Possible risk of impaired fertility.
R67 Vapours may cause drowsiness and dizziness.
R51/53 Toxic to aquatic organisms, May cause long-term adverse effects in the aquatic environment.

Safety phrase(s)
S1/2 Keep locked up and out of the reach of children.
S23 Do not breathe gas/fumes/vapour/spray.
S29 Do not empty into drains.
S36/37 Wear suitable protective clothing and gloves.
S38 In case of insufficient ventilation, wear suitable respiratory equipment.
S51 Use only in well-ventilated areas.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS #	Percent
N-HEXANE	110-54-3	10 - < 30
Propane	74-98-6	10 - < 30
2,2-dimethylbutane	75-83-2	< 10
2,3-dimethylbutane	79-29-8	< 10
2-methylpentane	107-83-5	< 10
3-Methylpentane	96-14-0	< 10
Butane	106-97-8	< 10
Cyclohexane	110-82-7	< 10
Distillates (petroleum), Solvent-refined Heavy Paraffinic	64741-88-4	< 10
Isobutane	75-28-5	< 10
Petrolatum	8009-03-8	< 10

Components	CAS #	Percent
Solvent naphta, Petroleum, Medium Aliphatic	64742-88-7	< 10
Zinc oxide	1314-13-2	< 10
Other components below reportable levels		10 - < 30

4. FIRST-AID MEASURES

Inhalation Move to fresh air. 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. Get medical attention immediately.

Skin contact Wash off immediately with plenty of water. Get medical attention if irritation develops and persists. Take off contaminated clothing and wash before reuse.

Eye contact Flush eyes immediately with large amounts of water. Get medical attention if irritation develops and persists.

Ingestion In the unlikely event of swallowing contact a physician or poison control centre. Rinse mouth thoroughly. Do not induce vomiting. Never give liquid to an unconscious person.

General advice Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Call a physician if symptoms develop or persist.

Notes to physician Oxygen, if needed. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Water. Foam. Carbon dioxide (CO2). Powder.

Specific methods Cool containers exposed to flames with water until well after the fire is out.

Hazchem Code None

Hazardous combustion products Carbon monoxide and carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Avoid inhalation of vapours and spray mists. In case of spills, beware of slippery floors and surfaces.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not contaminate water. Contact local authorities in case of spillage to drain/aquatic environment. Avoid discharge into drains, water courses or onto the ground.

Containment procedures ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. This material is classified as a water pollutant under the Clean Water Act and should be preventec from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Methods for cleaning up This product is miscible in water. Stop the flow of material, if this is without risk. Prevent product from entering drains. Isolate area until gas has dispersed. Following product recovery, flush area with water. Wipe up with absorbent material (e.g. cloth, fleece). For waste disposal, see section 13.

7. HANDLING AND STORAGE

Handling In case of insufficient ventilation, wear suitable respiratory equipment. Pressurised container: Do not pierce or burn, even after use. 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. Ground and bond containers when transferring material. Do not use if spray button is missing or defective. Do not re-use empty containers. Do not breathe dust/fume/gas/mist/vapors/spray. Use only in well-ventilated areas. Avoid prolonged exposure. Do not empty into drains.

Storage Level 1 Aerosol.

Keep locked up. Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Avoid exposure to long periods of sunlight. Refrigeration recommended. Store in a well-ventilated place. Keep out of the reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
2,2-dimethylbutane (75-83-2)	STEL	1000 ppm	
	TWA	500 ppm	
2,3-dimethylbutane (79-29-8)	STEL	1000 ppm	
	TWA	500 ppm	
2-methylpentane (107-83-5)	STEL	1000 ppm	
	TWA	500 ppm	
3-Methylpentane (96-14-0)	STEL	1000 ppm	
	TWA	500 ppm	
Butane (106-97-8)	TWA	1000 ppm	
Cyclohexane (110-82-7)	TWA	100 ppm	
Isobutane (75-28-5)	TWA	1000 ppm	
N-HEXANE (110-54-3)	TWA	50 ppm	
Petrolatum (8009-03-8)	TWA	5 mg/m3	Inhalable fraction.
Propane (74-98-6)	TWA	1000 ppm	

US. ACGIH. BEIs. Biological Exposure Indices

Components	Type	Value
N-HEXANE (110-54-3)	BEI	0.4 mg/l

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

Components	Type	Value	Form
2,2-dimethylbutane (75-83-2)	STEL	3500 mg/m3	
		1000 ppm	
	TWA	1760 mg/m3	
		500 ppm	
2,3-dimethylbutane (79-29-8)	STEL	3500 mg/m3	
		1000 ppm	
	TWA	1760 mg/m3	
		500 ppm	
2-methylpentane (107-83-5)	STEL	3500 mg/m3	
		1000 ppm	
	TWA	1760 mg/m3	
		500 ppm	
3-Methylpentane (96-14-0)	STEL	3500 mg/m3	
		1000 ppm	
	TWA	1760 mg/m3	
		500 ppm	
Butane (106-97-8)	TWA	1900 mg/m3	
		800 ppm	
Cyclohexane (110-82-7)	STEL	1050 mg/m3	
		300 ppm	
	TWA	350 mg/m3	
		100 ppm	
Distillates (petroleum), Solvent-refined Heavy Paraffinic (64741-88-4)	TWA	5 mg/m3	Mist.
N-HEXANE (110-54-3)	TWA	72 mg/m3	
		20 ppm	
Petrolatum (8009-03-8)	TWA	5 mg/m3	Mist.

Recommended monitoring procedures

Additional exposure data Not available.

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.

Personal protective equipment

Respiratory protection	If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator. In case of insufficient ventilation, wear suitable respiratory equipment.
Hand protection	Wear suitable gloves.
Eye protection	Not normally needed.
Skin and body protection	Wear suitable protective clothing. Wear protective gloves.
General	Applicable for industrial settings only: 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. Handle in accordance with good industrial hygiene and safety practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Not available.
Physical state	Gas.
Form	Aerosol Aerosol
Colour	Not available.
Odour	Not available.
Odour threshold	Not available.
pH	Not available.
Vapour pressure	133.842688761 hPa estimated
Density	1020.00 kg/m3 concentrate
Vapour density	Not available.
Boiling point	-31.83 °C (-25.3 °F) estimated
Melting point/freezing point	-187.6 °C (-305.7 °F) estimated
Solubility (water)	Not available.
Solubility (other)	Not available.
Specific gravity	0.633139942 estimated
Flash point	-104.00 °C (-155.20 °F) Pensky-Martens Closed Cup Propellant
Flammability limits in air, upper, % by volume	9.5 % estimated
Flammability limits in air, lower, % by volume	1.2 % estimated
Auto-ignition temperature	260 °C (500 °F) estimated
VOC	81 %
Percent volatile	0.0894375 % estimated
Other data	
Flammability class	Flammable IA estimated
Flash point class	Flammable IA

10. STABILITY AND REACTIVITY

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Avoid temperatures exceeding the flash point.
Materials to avoid	Strong oxidizing agents.
Hazardous decomposition products	Toxic gas. Irritants. At thermal decomposition temperatures, carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Toxicological data

Product	Species	Test results
Bel-Ray Super Clean Chain Lube (Mixture)		
Acute		
Dermal		
LD50	Rabbit	66666.6641 mg/kg, estimated

Product	Species	Test results
Inhalation		
LC50	Mouse	584.7243 mg/l, estimated
	Rat	4363.689 mg/l, estimated
Oral		
LD50	Wistar rat	92.5926 mg/kg, estimated

Components	Species	Test results
Butane (106-97-8)		
Acute		
Inhalation		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours
Cyclohexane (110-82-7)		
Acute		
Inhalation		
NOEL	Monkey	1243 mg/l, 6 Hours
Oral		
LD50	Mouse	1300 mg/kg
	Rat	29820 mg/kg
Isobutane (75-28-5)		
Acute		
Inhalation		
LC50	Mouse	52 mg/l, 1 Hours
N-HEXANE (110-54-3)		
Acute		
Inhalation		
LC50	Mouse	48000 mg/l, 4 Hours
Oral		
LD50	Rat	24 mg/kg
	Wistar rat	49 mg/kg
Propane (74-98-6)		
Acute		
Inhalation		
LC50	Rat	> 1442.847 mg/l, 15 Minutes
Zinc oxide (1314-13-2)		
Acute		
Inhalation		
LC50	Mouse	> 5.7 mg/l, 4 Hours
Oral		
LD50	Mouse	7950 mg/kg
	Rat	> 5 g/kg
Other		
LD50	Rat	240 mg/kg

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

Routes of exposure Inhalation. Skin contact.

Chronic toxicity Prolonged inhalation may be harmful. Danger of serious damage to health by prolonged exposure

Sensitisation

US ACGIH Threshold Limit Values: Skin designation

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

Carcinogenicity 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 Possible reproductive hazard.

Epidemiology No epidemiological data is available for this product.

Local effects Harmful by inhalation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Irritating to eyes. Irritating to skin.

Symptoms and target organs Irritating to mouth, throat, and stomach. Skin irritation.

12. ECOLOGICAL INFORMATION

Ecotoxicological data

Product		Species	Test results
Bel-Ray Super Clean Chain Lube (Mixture)			
Fish	LC50	Fish	217.4606 mg/l, 96 hours, estimated
Components		**Species**	**Test results**
Cyclohexane (110-82-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	3.961 - 5.181 mg/l, 96 hours
N-HEXANE (110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours
Zinc oxide (1314-13-2)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2246 mg/l, 96 hours

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

Ecotoxicity Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the environment.

Mobility This product is miscible in water.

Bioaccumulation

Bioaccumulative potential

Octanol/water partition coefficient log Kow

Propane	2.36
Isobutane	2.76
Butane	2.89
2,3-dimethylbutane	3.42
Cyclohexane	3.44
3-Methylpentane	3.6
2-methylpentane	3.74
2,2-dimethylbutane	3.82
N-HEXANE	3.9

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

13. DISPOSAL CONSIDERATIONS

Disposal instructions Contents under pressure. Do not puncture, incinerate or crush. 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 allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. 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. Do not re-use empty containers.

14. TRANSPORT INFORMATION

ADG

UN number UN1950
Proper shipping name AEROSOLS, flammable
Hazard class 2.1

IATA

UN number	UN1950
Proper shipping name	Aerosols, flammable
Hazard class	2.1
Special precautions	IMDG Regulated Marine Pollutant.
ERG Code	10L

IMDG

UN number	UN1950
Proper shipping name	AEROSOLS, flammable
Hazard class	2.1
Special precautions	IMDG Regulated Marine Pollutant.

ADG

IATA; IMDG

Hazchem Code	None
General	IMDG Regulated 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.)

Australia HVIC: Listed substance

Butane (CAS 106-97-8)	Listed.
Distillates (petroleum), Solvent-refined Heavy Paraffinic (CAS 64741-88-4)	Listed.
N-HEXANE (CAS 110-54-3)	Listed.
Petrolatum (CAS 8009-03-8)	Listed.
Solvent naphta, Petroleum, Medium Aliphatic (CAS 64742-88-7)	Listed.
Zinc oxide (CAS 1314-13-2)	Listed.

Australia Medicines & Poisons Schedule 4: Use/Concentration (%)/Exceptions

Zinc oxide (CAS 1314-13-2)	for human internal use Exception may apply, see the regulation for relevance.

Australia Medicines & Poisons Schedule 5: Use/Concentration/Exceptions

2,2-dimethylbutane (CAS 75-83-2)	Exception may apply, see the regulation for relevance.
2,3-dimethylbutane (CAS 79-29-8)	Exception may apply, see the regulation for relevance.
2-methylpentane (CAS 107-83-5)	Exception may apply, see the regulation for relevance.
3-Methylpentane (CAS 96-14-0)	Exception may apply, see the regulation for relevance.
Butane (CAS 106-97-8)	Exception may apply, see the regulation for relevance.
Cyclohexane (CAS 110-82-7)	Exception may apply, see the regulation for relevance.
Isobutane (CAS 75-28-5)	Exception may apply, see the regulation for relevance.
N-HEXANE (CAS 110-54-3)	Exception may apply, see the regulation for relevance.
Petrolatum (CAS 8009-03-8)	Exception may apply, see the regulation for relevance.
Solvent naphta, Petroleum, Medium Aliphatic (CAS 64742-88-7)	Exception may apply, see the regulation for relevance.

Inventory status

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

16. OTHER INFORMATION

Disclaimer

Bel-Ray Company 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.

Issue date

16-June-2010

Revision date

22-June-2013

This data sheet contains changes from the previous version in section(s):

TOXICOLOGICAL INFORMATION: Toxicological Data