



SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture	Bel-Ray EXS Synthetic Ester 4T Engine Oil 10W-50
Product code	99160
SDS number	6630
Registration number	-
Synonyms	None.
Date of first issue	13-June-2010
Version number	3,0
Revision date	30-August-2013
Supersedes date	27-October-2011

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Not available.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Directive 67/548/EEC or 1999/45/EC as amended

Classification Xn;R20/22

The full text for all R-phrases is displayed in section 16.

Classification according to Regulation (EC) No 1272/2008 as amended

Environmental hazards

Hazardous to the aquatic environment, Category 3
long-term aquatic hazard

Hazard summary

Physical hazards	Not classified for physical hazards.
Health hazards	Harmful by inhalation and if swallowed. Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects. Occupational exposure to the substance or mixture may cause adverse health effects.
Environmental hazards	Not classified for hazards to the environment.
Specific hazards	Not available.
Main symptoms	Not available.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms



Signal word Warning
Hazard statements Harmful if inhaled.

Precautionary statements

Prevention Keep out of reach of children. Read label before use. Avoid release to the environment. Use only outdoors or in a well-ventilated area.
Response If medical advice is needed, have product container or label at hand. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician. Specific treatment (see on this label).
Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information 98,12 % of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment. Contains 2,5-bis(octyldithio)-1,3,4-thiadiazole, Dioctyl Disulphide. May produce an allergic reaction.

2.3. Other hazards Not assigned.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

The components are not hazardous or are below required disclosure limits.

Composition comments The full text for all R- and H-phrases is displayed in section 16.

SECTION 4: First aid measures

General information Call a physician if symptoms develop or persist.

4.1. Description of 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. Call a POISON CENTRE or doctor/physician.

Skin contact Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Do not induce vomiting. If ingestion of a large amount does occur, call a poison control centre immediately. Never give liquid to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed Not available.

4.3. Indication of any immediate medical attention and special treatment needed In case of shortness of breath, give oxygen. Keep victim warm. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards Not available.

5.1. Extinguishing media

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire. Water.

5.2. Special hazards arising from the substance or mixture Not available.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear suitable protective equipment.

Special fire fighting procedures Water runoff can cause environmental damage.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Immediately evacuate personnel to safe areas. Local authorities should be advised if significant spillages cannot be contained. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering them. In case of spills, beware of slippery floors and surfaces.

For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the MSDS.

6.2. 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.

6.3. Methods and material for containment and cleaning up

This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Prevent product from entering drains.

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. For waste disposal, see section 13.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid prolonged exposure. Avoid release to the environment. Do not empty into drains.

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Room temperature - normal conditions. Keep container tightly closed. Keep out of the reach of children.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Belgium. Exposure Limit Values.

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	STEL	10 mg/m ³	Mist.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA	5 mg/m ³	Mist.
	STEL	10 mg/m ³	Mist.
White mineral oil (petroleum) (8042-47-5)	TWA	5 mg/m ³	Mist.
	STEL	10 mg/m ³	Mist.
	TWA	5 mg/m ³	Mist.

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	TWA	5 mg/m ³
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA	5 mg/m ³
White mineral oil (petroleum) (8042-47-5)	TWA	5 mg/m ³

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	Ceiling	1000 mg/m ³	
	TWA	200 mg/m ³	

Czech Republic. OELs. Government Decree 361

Components	Type	Value	Form
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	Ceiling	10 mg/m3	Aerosol
White mineral oil (petroleum) (8042-47-5)	TWA	5 mg/m3	Aerosol
	Ceiling	10 mg/m3	Aerosol
	TWA	5 mg/m3	Aerosol

Denmark. Exposure Limit Values

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	TLV	1 mg/m3	Mist.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TLV	1 mg/m3	Mist.
White mineral oil (petroleum) (8042-47-5)	TLV	1 mg/m3	Mist.

Finland. Workplace Exposure Limits

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	TWA	5 mg/m3	Mist.

Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	TWA	5 mg/m3	Mist.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA	5 mg/m3	Mist.
White mineral oil (petroleum) (8042-47-5)	TWA	5 mg/m3	Mist.

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	Ceiling	5 mg/m3	Mist.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	Ceiling	5 mg/m3	Mist.
White mineral oil (petroleum) (8042-47-5)	Ceiling	5 mg/m3	Mist.

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	TWA	1 mg/m3	Mist.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA	1 mg/m3	Mist.
White mineral oil (petroleum) (8042-47-5)	TWA	1 mg/m3	Mist.

Ireland. Occupational Exposure Limits

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	TWA	0,2 mg/m3	Inhalable fraction.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA	0,2 mg/m3	Inhalable fraction.
White mineral oil (petroleum) (8042-47-5)	TWA	0,2 mg/m3	Inhalable fraction.

Italy. Occupational Exposure Limits

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	TWA	5 mg/m3	Inhalable fraction.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA	5 mg/m3	Inhalable fraction.
White mineral oil (petroleum) (8042-47-5)	TWA	5 mg/m3	Inhalable fraction.

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	STEL	3 mg/m3	Fume and mist.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA STEL	1 mg/m3 3 mg/m3	Fume and mist. Fume and mist.
White mineral oil (petroleum) (8042-47-5)	TWA STEL	1 mg/m3 3 mg/m3	Fume and mist. Fume and mist.
	TWA	1 mg/m3	Fume and mist.

Netherlands. OELs (binding)

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	TWA	5 mg/m3	Mist.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA	5 mg/m3	Mist.
White mineral oil (petroleum) (8042-47-5)	TWA	5 mg/m3	Mist.

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	TLV	1 mg/m3	Mist.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TLV	1 mg/m3	Mist.
White mineral oil (petroleum) (8042-47-5)	TLV	1 mg/m3	Mist.

Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	STEL	10 mg/m3	Aerosol
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA STEL	5 mg/m3 10 mg/m3	Aerosol Aerosol
White mineral oil (petroleum) (8042-47-5)	TWA STEL	5 mg/m3 10 mg/m3	Aerosol Aerosol
	TWA	5 mg/m3	Aerosol

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	STEL	10 mg/m3	Aerosol
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA STEL	5 mg/m3 10 mg/m3	Aerosol Aerosol

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value	Form
White mineral oil (petroleum) (8042-47-5)	TWA	5 mg/m3	Aerosol
	STEL	10 mg/m3	Aerosol
	TWA	5 mg/m3	Aerosol

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	STEL	10 mg/m3	
	TWA	5 mg/m3	
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	STEL	10 mg/m3	
	TWA	5 mg/m3	
White mineral oil (petroleum) (8042-47-5)	STEL	10 mg/m3	
	TWA	5 mg/m3	

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value	Form
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	TWA	1 mg/m3	Fume and mist.
		5 ppm	Fume and mist.
White mineral oil (petroleum) (8042-47-5)	TWA	1 mg/m3	Fume and mist.
		5 ppm	Fume and mist.

Spain. Occupational Exposure Limits

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.
White mineral oil (petroleum) (8042-47-5)	STEL	10 mg/m3	Mist.
	TWA	5 mg/m3	Mist.

Sweden. Occupational Exposure Limit Values

Components	Type	Value	Form
Distillates (petroleum), Hydrotreated Heavy Naphthenic (64742-52-5)	STEL	3 mg/m3	Mist.
	TWA	1 mg/m3	Mist.
Paraffin oils (petroleum), catalytic de-waxed light (64742-71-8)	STEL	3 mg/m3	Mist.
	TWA	1 mg/m3	Mist.
White mineral oil (petroleum) (8042-47-5)	STEL	3 mg/m3	Mist.
	TWA	1 mg/m3	Mist.

Biological limit values

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

Recommended monitoring procedures

Follow standard monitoring procedures.

8.2. Exposure controls**Appropriate engineering controls**

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. Provide adequate general and local exhaust ventilation.

Individual protection measures, such as personal protective equipment

General information	Applicable for industrial settings only: Use personal protective equipment as required.
Eye/face protection	Not normally needed.
Skin protection	
- Hand protection	Not normally needed.
- Other	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Thermal hazards	Not available.

Hygiene measures Handle in accordance with good industrial hygiene and safety practices.

Environmental exposure controls Contain spills and prevent releases and observe national regulations on emissions. Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Oily.
Appearance	
Physical state	Liquid.
Form	Liquid. Liquid.
Colour	Amber. Amber.
Odour	Petroleum
Odour threshold	Not available.
pH	Not applicable.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 250 °C (> 482 °F)
Flash point	190,00 °C (374,00 °F) Pensky-Martens Closed Cup
Auto-ignition temperature	260 °C (500 °F) estimated

Information on basic physical and chemical properties

Flammability limit - lower (%)	1 % estimated
Flammability limit - upper (%)	50 % estimated
Vapour pressure	0,000011 hPa estimated
Density	865,00 kg/m ³
Vapour density	Not applicable.
Evaporation rate	Not applicable.
Relative density	Not available.
Solubility(ies)	Negligible
Solubility (other)	Hydrocarbon Solvents Oil
Partition coefficient (n-octanol/water)	Not available.
Decomposition temperature	Not available.
Viscosity	131,3 cSt ASTM D445
Viscosity temperature	40 °C (104 °F)
VOC (Weight %)	0,0846 % estimated
Percent volatile	0,0846 % estimated

Other data

Flammability class	Combustible IIIB estimated
Specific gravity	0,865

9.2. Other information No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity	Strong oxidizing agents.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Avoid temperatures exceeding the flash point.
10.5. Incompatible materials	None known.
10.6. Hazardous decomposition products	Nitrogen oxides (NO _x). At thermal decomposition temperatures, carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

General information	Not available.
Information on likely routes of exposure	
Ingestion	Based on available data, the classification criteria are not met.
Inhalation	Toxic by inhalation.
Skin contact	Based on available data, the classification criteria are not met.
Eye contact	Due to lack of data the classification is not possible.
Symptoms	Not available.

11.1. Information on toxicological effects

Acute toxicity Toxic by inhalation.

Product	Species	Test results
Bel-Ray EXS Synthetic Ester 4T Engine Oil 10W-50 (Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	3332,2227 mg/kg, estimated
<i>Inhalation</i>		
LC50	Rat	10000 mg/m ³ , estimated 618 mg/l, estimated
<i>Oral</i>		
LD50	Rat	3311,2583 mg/kg, estimated 1182,0331 g/kg, estimated

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

Skin corrosion/irritation	Due to lack of data the classification is not possible.
Serious eye damage/irritation	Due to lack of data the classification is not possible.
Respiratory sensitisation	Due to lack of data the classification is not possible.
Skin sensitisation	Due to lack of data the classification is not possible.
Germ cell mutagenicity	Due to lack of data the classification is not possible.
Carcinogenicity	Due to lack of data the classification is not possible.
Reproductive toxicity	Due to lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to lack of data the classification is not possible.
Aspiration hazard	Due to lack of data the classification is not possible.
Mixture versus substance information	Not available.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity Accumulation in aquatic organisms is expected. Harmful to aquatic life with long lasting effects.

Product	Species		Test results
Bel-Ray EXS Synthetic Ester 4T Engine Oil 10W-50 (Mixture)			
Crustacea	EC50	Daphnia	579,1962 mg/l, 48 hours, estimated
Fish	LC50	Fish	2051,4185 mg/l, 96 hours, estimated

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

12.2. Persistence and degradability No data is available on the degradability of this product.

12.3. Bioaccumulative potential Not available.

Partition coefficient n-octanol/water (log Kow) Not available.

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil Not available.

12.5. Results of PBT and vPvB assessment Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects Not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

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.

EU waste code The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information 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. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

ADR

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

ADN

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Authorisations

Restrictions on use

Other regulations The product is classified and labelled in accordance with EC directives or respective national laws This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006.

National regulations Not available.

15.2. Chemical safety assessment No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations	Not available.
References	Not available.
Information on evaluation method leading to the classification of mixture	Not available.
Full text of any statements or R-phrases and H-statements under Sections 2 to 15	R20/22 Harmful by inhalation and if swallowed.
Revision information	This document has undergone significant changes and should be reviewed in its entirety.
Training information	Not available.
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	13-January-2011
Revision date	30-August-2013
Print date	30-August-2013

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no) *
Canada	Domestic Substances List (DSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	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)