



## Material Safety Data Sheet

### Section 1: Chemical Product and Company Identification

**Material Name:** BOSS R&O Turbine 32, 46, 68, 100, 150, 220

**Product Use:** For lubricating hydraulic systems. If this product is used in combination with other products, refer to the Material Safety Data Sheet for those products.

**Synonyms:** Petroleum oil; Lube oil; Petroleum hydrocarbon; Lubricant.

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### Section 2: Hazardous Identification

#### EMERGENCY OVERVIEW

**Appearance:** Amber liquid, petroleum odor.

**Signal Word** CAUTION!

#### Health Hazards

May be harmful if swallowed.

May irritate eyes and skin.

#### POTENTIAL HEALTH EFFECTS

**Inhalation:** This product is not likely to present an inhalation hazard at normal temperatures and pressures. However, when aerosolizing, misting, or heating this product, high concentrations of generated vapor or mist may irritate the respiratory tract (nose, throat, and lungs).

**Eyes:** May cause irritation.

**Skin:** May cause irritation. Not likely to be absorbed through the skin in harmful amounts.

**Ingestion:** May be harmful if swallowed. May cause throat irritation, nausea, vomiting, and diarrhea. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

**Medical Conditions Aggravated by Exposure:** Individuals with pre-existing respiratory tract (nose, throat, and lungs), eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

**Chronic:** Prolonged or repeated inhalation of oil mist may cause oil pneumonia, lung tissue inflammation, and/or fibrous tissue formation. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis).

**Cancer Information:** No known carcinogenicity. For more information, see **SECTION 11: MUTAGENICITY and CARCINOGENICITY**.

Also see **SECTION 15: CALIFORNIA**.

**Environmental Hazards:** Not available. Also see **SECTION 12: ECOLOGICAL INFORMATION**.



### Section 3: Composition / Information on Ingredients

CAS	Component	Percent
64742-58-1	Lubricating oils, petroleum, hydrotreated spent	4.5-99*
64742-62-7	Residual oils (petroleum), solvent dewaxed	21-99*
72623-83-7	Lubricating oils (petroleum), C>25, hydrotreated bright stock	0-85*
64741-88-4	Petroleum distillates, solvent-refined heavy paraffinic	0-85*
64742-01-4	Residual oils (petroleum), solvent refined	0-85*
64742-57-0	Residual oils (petroleum), hydrotreated	0-85*
Not Available	Petroleum Distillate	0.1-1
Not Available	Alkyl phenol	0.1-1
72623-86-0	Lubricating oils, petroleum, C15-30, hydrotreated neutral oil-based	0.1-1

\* Even though the concentration range does not fall under the ranges prescribed by WHMIS, this is the actual range which varies with each batch of the product.

### Section 4: First Aid Measures

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.

**Eyes:** If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention. **Skin** Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists. If product is injected under pressure into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, a physician should immediately evaluate the individual as a medical emergency. Wash contaminated clothing before reuse.

**Ingestion:** Do NOT induce vomiting. Immediately get medical attention. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person.

**Notes to Physicians:** Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident.

### Section 5: Fire Fighting Measures

**Hazardous Combustion Products:** Decomposition and combustion materials may be toxic. Burning may produce carbon monoxide, and unidentified organic compounds.

**Conditions of Flammability:** Sparks or flame. Product may burn, but does not ignite readily.

**Extinguishing Media:** Carbon dioxide, regular foam, dry chemical, water spray, or water fog. Water or foam may cause frothing.

**Protective Equipment for Firefighting:** A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

**Fire Fighting Equipment/Instructions:** Keep storage containers cool with water spray.

**NFPA Ratings: Health: 1 Fire: 1 Reactivity: 0**

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

**Fire and Explosion Hazards:** Heated containers may rupture. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact or static discharge.



## Section 6: Accidental Release Measures

**Personal Precautions, Protective Equipment and Emergency Procedures:** Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

**Methods and Materials for Containment and Clean Up:** Remove all ignition sources. Do not touch or walk through spilled products. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or absorb with compatible sorbent material and shovel with a clean, spark proof tool into a sealable container for disposal.

Additionally, for large spills: Dike far ahead of liquid spill for collection and later disposal.

There may be specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product.

Also see Section 15: Regulatory Information.

## Section 7: Handling and Storage

**Handling Procedures:** Keep away from sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean tools and explosion proof equipment. When transferring large volumes of product, metal containers, including trucks and tank cars, should be grounded and bonded. This product has a low vapor pressure and is not expected to present an inhalation hazard under normal temperatures and pressures. However, when aerosolizing, misting, or heating this product, do not breathe vapor or mist. Use in a well-ventilated area. Avoid contact with eyes, skin, clothing, and shoes.

**Shipping and Storing:** Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous.

## Section 8: Exposure Controls / Personal Protection

### Exposure Guidelines

**Component Exposure Limits** None available.

**Engineering Controls:** Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits.

### Personal Protective Equipment

**Respiratory:** No respiratory protection is normally required. Use NIOSH-certified P- or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Protection provided by air purifying respirators is limited. Do not use N-rated respirators. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4. Consult a qualified Industrial Hygienist or Safety Professional for respirator selection guidance.

**Eyes/Face:** Where eye contact is likely, wear safety glasses; contact lens use is not recommended.

**Skin:** No skin protection is normally required. Where prolonged or repeated skin contact is likely, wear chemical impervious protective gloves; use of natural rubber or equivalent gloves is not recommended.

When product is heated and skin contact is likely, wear heat-resistant gloves, boots, and other protective clothing. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant face shield, boots, apron, whole body suits or other protective clothing.



**Personal Hygiene:** Use good personal hygiene. Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard leather articles, such as shoes, saturated with this product.

**Other Personal Protective Equipment:** Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

### Section 9: Physical & Chemical Properties

<b>Appearance/Odor:</b>	Amber liquid, petroleum odor Petroleum	<b>pH:</b>	Not applicable
<b>Boiling Point:</b>	475°F (246°C) (minimum)	<b>Specific Gravity:</b>	0.87 (water=1) (approximately)
<b>Solubility (H2O):</b>	Insoluble	<b>Octanol/H2O Coeff:</b>	Not available
<b>Density:</b>	7.3 LB/US gal (870 g/l) (approximately)	<b>Molecular Weight:</b>	Not applicable
<b>Evaporation Rate:</b>	Not available	<b>Auto Ignition Temperature:</b>	Not available
<b>Odor Threshold:</b>	Not available	<b>LFL:</b>	Not available
<b>UFL:</b>	Not available	<b>Vapor Pressure:</b>	less than 0.1 mm Hg at 68°F (20°C)
<b>Flash Point:</b>	392°F (200°C) (minimum) Cleveland Open Cup		
<b>Melting Point:</b>	Not available [pour point -22°F (-30°C) (maximum)]		

### Section 10: Chemical Stability & Reactivity Information

**Stability:** Stable under normal temperatures and pressures.

**Incompatibility:** Avoid oxidizing agents.

**Reactivity:** Polymerization is not known to occur under normal temperature and pressures. Not reactive with water.

**Hazardous Decomposition Products:** None under normal temperatures and pressures. See also **SECTION 5: HAZARDOUS COMBUSTION PRODUCTS.**

**Conditions to Avoid:** Avoid sparks or flame.

### Section 11: Toxicological Information

#### Toxicity Data

#### Component Analysis - LD50/LC50

**Lubricating oils, petroleum, and hydrotreated spent (64742-58-1)**

Oral LD50 Rat >2000 mg/kg; Dermal LD50 Rat >2000 mg/kg; Dermal LD50 Rabbit >4480 mg/kg

**Residual oils (petroleum), solvent dewaxed (64742-62-7)**

Inhalation LC50 Rat 2.18 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

**Petroleum distillates, solvent-refined heavy paraffinic (64741-88-4)**

Inhalation LC50 Rat 2.18 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

**Residual oils (petroleum), solvent refined (64742-01-4)**

Inhalation LC50 Rat 2.18 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg **Lubricating oils (petroleum), C>25, hydrotreated bright stock (72623-83-7)**

Oral LD50 Rat >5000 mg/kg

**Lubricating oils, petroleum, C15-30, hydrotreated neutral oil-based (72623-86-0)**

Inhalation LC50 Rat 2.18 mg/L 4 h; Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

**Acute Effects:** May be harmful if swallowed. May irritate eyes and skin. May cause throat irritation, nausea, vomiting, and diarrhea. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

**Repeated Dose Effects:** No information is available.



**Component Carcinogenicity**

**Lubricating oils, petroleum, and hydrotreated spent (64742-58-1)**

**ACGIH:** A4 - Not Classifiable as a Human Carcinogen (highly & severely refined); A2 - Suspected Human Carcinogen (poorly & mildly refined, related to Oil mist, mineral)

**Residual oils (petroleum), solvent refined (64742-01-4)**

**ACGIH:** A4 - Not Classifiable as a Human Carcinogen (highly & severely refined); A2 - Suspected Human Carcinogen (poorly & mildly refined, related to Oil mist, mineral)

**Residual oils (petroleum), hydrotreated (64742-57-0)**

**ACGIH:** A4 - Not Classifiable as a Human Carcinogen (highly & severely refined); A2 - Suspected Human Carcinogen (poorly & mildly refined, related to Oil mist, mineral)

**Petroleum distillates, solvent-refined heavy paraffinic (64741-88-4)**

**ACGIH:** A4 - Not Classifiable as a Human Carcinogen (highly & severely refined); A2 - Suspected Human Carcinogen (poorly & mildly refined, related to Oil mist, mineral)

**Residual oils (petroleum), solvent dewaxed (64742-62-7)**

**ACGIH:** A4 - Not Classifiable as a Human Carcinogen (highly & severely refined); A2 - Suspected Human Carcinogen (poorly & mildly refined, related to Oil mist, mineral)

**Lubricating oils (petroleum), C>25, hydrotreated bright stock (72623-83-7)**

**ACGIH:** A4 - Not Classifiable as a Human Carcinogen (highly & severely refined); A2 - Suspected Human Carcinogen (poorly & mildly refined, related to Oil mist, mineral)

**Sensitization:** Based on best current information, there is no known human sensitization associated with this product.

**Mutagenicity:** Experimental evidence suggests that this product does not cause mutagenesis.

**Reproductive Toxicity:** Based on best current information, there is no known reproductive toxicity associated with this product. Also see SECTION 15: CALIFORNIA.

**Teratogenicity:** Based on best current information, there is no known teratogenicity associated with this product.

**Section 12: Ecological Information**

**Ecotoxicity:** No information available for the product.

**Component Analysis - Ecotoxicity - Aquatic Toxicity**

**Lubricating oils, petroleum, and hydrotreated spent (64742-58-1)**

Duration/Test/Species	Concentration/Conditions Notes
96 Hr LC50 Brachydanio rerio	79.6 mg/L [semi-static]
96 Hr LC50 Pimephales promelas	3.2 mg/L [semi-static]

**Residual oils (petroleum), solvent dewaxed (64742-62-7)**

Duration/Test/Species	Concentration/Conditions Notes
96 Hr LC50 Oncorhynchus mykiss	>5000 mg/L

**Petroleum distillates, solvent-refined heavy paraffinic (64741-88-4)**

Duration/Test/Species	Concentration/Conditions Notes
96 Hr LC50 Oncorhynchus mykiss	>5000 mg/L

**Residual oils (petroleum), solvent refined (64742-01-4)**

Duration/Test/Species	Concentration/Conditions Notes
96 Hr LC50 Oncorhynchus mykiss	>5000 mg/L





**Lubricating oils (petroleum), C>25, hydrotreated bright stock (72623-83-7)**

Duration/Test/Species	Concentration/Conditions Notes
96 Hr LC50 Lepomis macrochirus	>10000 mg/L

**Lubricating oils, petroleum, C15-30, hydrotreated neutral oil-based (72623-86-0)**

Duration/Test/Species	Concentration/Conditions Notes
96 Hr LC50 Oncorhynchus mykiss	>5000 mg/L

**Persistence/Degradability:** No information available for the product.

**Bioaccumulation/Accumulation:** No information available for the product.

**Mobility in Environmental Media:** No information available for the product.

**Other Adverse Effects:** No additional information available.

### Section 13: Disposal Considerations

**Disposal Instructions:** Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Boss Lubricants regarding proper recycling or disposal.

**US EPA Waste Number & Descriptions:** These products, if discarded, are not expected to be a characteristic or listed hazardous waste. If recycled in the USA, they can be managed in accordance with the used oil exemption under 40 CFR Part 279. Processing, use, or contamination by the user may change the waste code(s) applicable to the disposal of these products.

### Section 14: Transportation Information

**Emergency Response Guide Number**

Not applicable.

Reference *North American Emergency Response Guidebook*

**DOT Shipping Name:** Not regulated as a hazardous material.

**TDG Shipping Name:** Not regulated as a dangerous good.

**IATA Information:** No Classification Assigned.

**IMDG Information:** No Classification Assigned.

### Section 15: Regulatory Information

**Volatile Organic Compounds (As Regulated)** Negligible, As per 40 CFR 51.100(s).

**SARA Sections 311/312**

**Component Analysis:** This product poses the following health hazard(s) as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):

Immediate (Acute) Health Hazard

Delayed (Chronic) Health Hazard

**SARA 302/304**

**Component Analysis:** Based on the ingredient(s) listed in SECTION 3, this product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.



**SARA Section 313**

**Component Analysis:** This product does not contain any "toxic" chemical subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

**CERCLA**

**Component Analysis:** Based on the ingredient(s) listed in SECTION 3, this product does not contain any "hazardous substance" listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4.

**TSCA:** The component of this product is listed on, or is automatically included as "naturally occurring chemical substances" on, or is exempted from the requirement to be listed on, the TSCA Inventory.

**Component Analysis**

Component	CAS #	TSCA
Lubricating oils, petroleum, hydrotreated spent	64742-58-1	Yes
Residual oils (petroleum), solvent dewaxed	64742-62-7	Yes
Residual oils (petroleum), hydrotreated	64742-57-0	Yes
Petroleum distillates, solvent-refined heavy paraffinic	64741-88-4	Yes
Residual oils (petroleum), solvent refined	64742-01-4	Yes
Lubricating oils (petroleum), C>25, hydrotreated bright stock	72623-83-7	Yes
Lubricating oils, petroleum, C15-30, hydrotreated neutral oil-based	72623-86-0	Yes

**State Regulations**

**U.S. State Regulations:** None of this product's components are listed on the state lists from CA, MA, MN, NJ or PA.

**Canadian Regulations:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

**California:** This product does not contain any chemical known to the State of California to cause cancer. This product does not contain any chemical known to the State of California to cause birth defects or other reproductive harm.

**Component Analysis**

Component	CAS #	CAN
Lubricating oils, petroleum, hydrotreated spent	64742-58-1	DSL
Residual oils (petroleum), solvent dewaxed	64742-62-7	DSL
Residual oils (petroleum), hydrotreated	64742-57-0	DSL
Petroleum distillates, solvent-refined heavy paraffinic	64741-88-4	DSL
Residual oils (petroleum), solvent refined	64742-01-4	DSL
Lubricating oils (petroleum), C>25, hydrotreated bright stock	72623-83-7	DSL
Lubricating oils, petroleum, C15-30, hydrotreated neutral oil-based	72623-86-0	DSL

**Canadian WHMIS Information:** Not regulated.

**Canadian Environmental Protection Act (CEPA):** All of the components of this product is listed on, or is automatically included as "substance occurring in nature" on, or is exempted from the requirements to be listed on, the Canadian Domestic Substances List (DSL).





## Section 16: Other Information

**Label/Other Information** Not available.

**Revision Information:** Reformat of MSDS. Includes all weight grades.

### Disclaimer

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, BOSS Lubricants assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information or the product to which the information refers. The data contained on this sheet apply to the product as supplier to the user.