

# Material Safety Data Sheet

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## 1. Chemical Product and Company Identification

Company Name : O.S. Engines Mfg.Co., Ltd.  
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Osaka, Japan 546-0003  
Contact : Sales Department  
Tel/Fax : 81-6-6702-0225 / 81-03-6704-2722

MSDS Number : BE-0001

Products Name : Bio-Ethanol Glow Fuel O.S. BE-1

Purpose : Fuel for O.S. Bio-Ethanol Model Engines only

## 2. Identification of material

Single or Mixed : Mixed

Chemical Name : Mixed products of Lubricants mainly based on Ethanol

Ingredient	Ethanol (Ethyl Alcohol)	Lubricant
Content	90%	10%
Chemical	C <sub>2</sub> H <sub>6</sub> O	N/A
CAS NO.	64-17-5	N/A
UN NO.	1993	

\*Note: OSHA Hazard Classification for the above Lubricant: This product is not considered to be hazardous under 29CFR 1910.1200.

This mixture has the predominant characteristics of ethanol and the majority of the data relates to that substance. However, the relevant characteristics of the other ingredients have been taken into account in preparing this data sheet.

## 3. Hazards Identification

### Emergency Overview

Appearance : Pink-colored liquid. Flash Point: 13.9 deg.C (Reference: As Ethanol 100%)

Warning! Flammable liquid and vapor.

Causes respiratory tract irritation. May cause central nervous system depression. Cause severe eye irritation. This substance has caused adverse reproductive and fetal effects in humans. Causes moderate skin irritation. May cause liver, kidney and heart damage.

Target Organs: Kidney, heart, central nervous system, liver.

Eye Contact: Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.

Skin Contact: Causes moderate skin irritation. May cause cyanosis of the extremities.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by

nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.

Chronic: May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage.

#### **4. First Aid Measures**

Eye Contact: Get medical aid. Gently lift eyelids and flush continuously with water.

Skin Contact: Get medical aid. Wash clothing before reuse. Flush skin with plenty of soap and water.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give several cupfuls of water.

Never give anything by mouth to an unconscious person. Get medical aid.

Antidote: None reported.

#### **5. Fire Fighting Measures**

General Information: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixture at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

Fire Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant form. For large fires, use water spray, fog, or alcohol-resistant form. Use water spray to cool fire-exposed containers. Water may be ineffective. Do not use straight streams of water.

Ignition Temperature: 439°C (822.2°F) (Reference: As Ethanol 100%)

Flash Point: 16.6°C (61.88°F) (Reference: As Ethanol 100%)

Boiling Point: 78.3°C (172.9°F) (Reference: As Ethanol 100%)

Explosion Limits: Lower 3.3vol% ~ Upper 19.0vol% (Reference: As Ethanol 100%)

#### **6. Accidental Release Measures**

General Information: Use proper personal protective equipment as indicated in No.8.

Spills/Leaks: Absorb spill with inert material, then place in suitable container. Remove all source of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

#### **7. Handling and Storage**

Handling: Wash thoroughly after handling. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation.

Do not pressurize, cut, weld, braze, solder, drill, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, well-ventilated area away from incompatible substances. Flammable-liquid. Do not store near perchlorates, peroxides, chromic acid or nitric acid.

#### **8. Exposure Controls, Personal Protection**

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles and face protection.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

#### **9. Physical and Chemical Properties**

Appearance: Volatile flammable liquid with light pink and mild odor.

pH : Not available  
Vapor Pressure: 5731Pa at 20°C (Reference: As Ethanol 100%)  
Vapor Density: 1.59 (Reference: As Ethanol 100%)  
Evaporation Rate: Not available  
Boiling Point: 78.5°C (Reference: As Ethanol 100%)  
Freezing/Melting Point: -114.1°C (Reference: As Ethanol 100%)  
Decomposition Temperature: Not available  
Solubility: Miscible with water  
Specific Gravity/Density: 0.789 at 20°C (Reference: As Ethanol 100%)

## 10. Stability and Reactivity

<Reference> As Ethanol 100%

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, ignition sources, excess heat, oxidizers.

Incompatibilities with Other Materials: Strong oxidizing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane plus water, acetyl chloride, permanganic acid, ruthenium(VIII) oxide, uranyl perchlorate, potassium dioxide.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

## 11. Toxicological Information

<Reference> As Ethanol 100%

Toxicity: Acute oral toxicity(LD50):3450mg/kg[Mouse]

Acute toxicity of the vapor(LC50):20000ppm 10H [Rat]

Chronic effects on Humans:Developmental Toxicity : Classified Reproductive system/toxin/female, Reproductive system/toxin/male[SUSPECTED]

Acute effects on Humans: May be hazardous in case of eye contact(irritant). May be hazardous in case of skin contact(irritant). Skin inflammation is characterized by itching, scaling, or,occasionally, blistering. Hazardous in case of inhalation. Hazardous in case of ingestion.

Irritancy : Draize Test (Rabbit)

Skin: 20mg/24H. Moderate

Eye: 500mg/24H. Mild

Sensitization : Not available.

Carcinogenicity: ACGIH-A4 Not Classifiable as a Human Carcinogen

Reproductive Toxicity: Classified Reproductive system/toxin/female, Reproductive/toxin/male[SUSPECTED]

Teratogenicity: Not available.

Synergistic Products: Not available.

## 12. Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Toxicity of the Products of Biodegradation:

The products of degradation are less toxic than the product itself.

## 13. Disposal Considerations

Contact a licensed professional waste disposal service to dispose of this material. Burn in chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all countries and local environmental regulations.

## 14. Transport Information

IMDG Classification: Not available.

IATA Classification: Not available.

<Precautions in Delivery>

Use proper container and carboard.

Check the leak from container, load without turn over, dropping and damage and prevent the load collapse.

Do not contact to fire nor add the shock and rubbing.

Do not deliver with hazardous products and high-pressure gas of the first group (oxidizable solid) and the 6th group (oxidizable liquid). Comply with the proper regulations.

### 15.Regulatory Information

The fire Services Act: Hazardous products (4 class 1st oil group)

Industrial Safety and Health Act: Hazardous products (Inflammable products)

Ship Safty Act: Inflammable liquids

Aviation Safety Act: Inflammable liquids

Ports and Harbors Act: Inflammable liquids

Road Transportation Act: Hazardous products, explosive liquids

### 16.Other Information

**Source of Data:** This Material Safety Data Sheet provided by manufacturers of various chemicals and lubricant. Various statutory requirements and international agreements.

The preparation is intended only as a fuel for model glow engines (Ethanol fuel use engines only) used to power of all descriptions. No responsibility can be accepted for any other use.

The information contained in this data sheet is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

The contents written in this sheet possibly will be changed according to the new knowledge.