



## 1. Chemical product and company identification

<b>Product name</b>	Brayco 460
<b>MSDS #</b>	451702
<b>Historic MSDS #:</b>	0000001448, 27014-AW
<b>Code</b>	451702-US02
<b>Product use</b>	Lubrication of gas turbines (jet engines) - to be used in accordance with engine manufacturers' guidelines. Lubricant
<b>Manufacturer</b>	Castrol Industrial North America, Inc. 150 W. Warrenville Road Naperville, IL 60563
<b>Supplier</b>	Castrol Industrial North America, Inc. 150 W. Warrenville Road Naperville, IL 60563 Product Information: 1-800-621-2661
<b>EMERGENCY SPILL INFORMATION:</b>	1 (800) 424-9300 CHEMTREC (USA)

## 2. Composition/information on ingredients

Ingredient name	CAS #	%
Base oil - highly refined	64742-53-6	75 - 80
Base oil - highly refined	72623-86-0	15 - 20

## 3. Hazards identification

<b>Physical state</b>	Liquid.
<b>Color</b>	Amber.
<b>Emergency overview</b>	CAUTION!  MAY CAUSE EYE IRRITATION. MAY CAUSE SKIN IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION.  Avoid contact with eyes, skin and clothing. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis. Wash thoroughly after handling. Use with adequate ventilation. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable. Keep container closed.
<b>Routes of entry</b>	Dermal contact. Eye contact. Inhalation. Ingestion.
<b>Potential health effects</b>	
<b>Eyes</b>	May cause eye irritation.
<b>Skin</b>	May cause skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis. Used engine oil may contain hazardous components which have the potential to cause skin cancer.
<b>Inhalation</b>	May cause respiratory tract irritation.
<b>Ingestion</b>	Ingestion may cause gastrointestinal irritation and diarrhea.

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		<b>Language</b> ENGLISH.
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**Medical conditions aggravated by over-exposure**

None identified.

See toxicological Information (section 11).

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## 4. First aid measures

<b>Eye contact</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
<b>Skin contact</b>	Immediately wash exposed skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.
<b>Inhalation</b>	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>Ingestion</b>	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear. If large quantities of this material are swallowed, call a physician immediately.

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## 5. Fire-fighting measures

<b>Flammability of the product</b>	May be combustible at high temperature.
<b>Flash point</b>	132 °C (Open cup) Cleveland.
<b>Products of combustion</b>	These products are carbon oxides
<b>Unusual fire/explosion hazards</b>	This material is not explosive as defined by established regulatory criteria.
<b>Fire-fighting media and instructions</b>	In case of fire, use water fog, foam, dry chemicals, or carbon dioxide. Do not use water jet.
<b>Protective clothing (fire)</b>	Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

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## 6. Accidental release measures

<b>Personal precautions</b>	Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (See Section: "Exposure controls/personal protection"). Follow all fire fighting procedures (See Section: "Fire-fighting measures").
<b>Environmental precautions and clean-up methods</b>	If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Avoid contact of spilled material with soil and prevent runoff entering surface waterways. See Section 13 for Waste Disposal Information.
<b>Personal protection in case of a large spill</b>	Chemical splash goggles. Chemical resistant protective suit. Boots. Chemical resistant gloves. Vapor respirator or a self-contained breathing apparatus. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.  CAUTION: The protection provided by air-purifying respirators is limited. Use a positive pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of air-purifying respirator.

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## 7. Handling and storage

### Handling

Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Use only with adequate ventilation. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable.

### Storage

Keep container tightly closed. Keep container in a cool, well-ventilated area. Empty containers may contain harmful, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### Ingredient name

Base oil - highly refined

#### Occupational exposure limits

##### ACGIH (United States).

STEL: 10 mg/m<sup>3</sup> 15 minute(s). Form: Oil mist, mineral

TWA: 5 mg/m<sup>3</sup> 8 hour(s). Form: Oil mist, mineral

##### OSHA (United States).

TWA: 5 mg/m<sup>3</sup> 8 hour(s). Form: Oil mist, mineral

Base oil - highly refined

##### ACGIH (United States).

STEL: 10 mg/m<sup>3</sup> 15 minute(s). Form: Oil mist, mineral

TWA: 5 mg/m<sup>3</sup> 8 hour(s). Form: Oil mist, mineral

##### OSHA (United States).

TWA: 5 mg/m<sup>3</sup> 8 hour(s). Form: Oil mist, mineral

Some states may enforce more stringent exposure limits.

### Control Measures

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable.

### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

### Personal protection

#### Eyes

Avoid contact with eyes. Safety glasses with side shields or chemical goggles.

#### Skin and body

Avoid contact with skin and clothing. Wear suitable protective clothing.

#### Respiratory

Use only with adequate ventilation. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable.

#### Hands

Wear suitable gloves.



Consult local authorities for acceptable exposure limits.

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## 9. Physical and chemical properties

<b>Physical state</b>	Liquid.
<b>Odor</b>	Oily [Slight]
<b>Color</b>	Amber.
<b>Heat of combustion</b>	Not available.
<b>Pour Point</b>	-49 °C
<b>Specific gravity</b>	0.871 to 0.887
<b>Density</b>	879 kg/m <sup>3</sup> (0.879 g/cm <sup>3</sup> ) at 15°C
<b>Solubility</b>	Insoluble in water.
<b>Viscosity</b>	Kinematic: 10 mm <sup>2</sup> /s (10 cSt) at 37.778°C

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## 10. Stability and reactivity

<b>Stability and reactivity</b>	The product is stable.
<b>Conditions to avoid</b>	Keep away from heat, sparks and flame.
<b>Incompatibility with various substances</b>	Reactive or incompatible with the following materials: oxidizing materials.
<b>Hazardous decomposition products</b>	Products of combustion: carbon oxides (CO, CO <sub>2</sub> ) (carbon monoxide, carbon dioxide).
<b>Hazardous polymerization</b>	Will not occur.

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## 11. Toxicological information

### Chronic toxicity

<b>Carcinogenic effects</b>	No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH or the International Agency for Research on Cancer (IARC). No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program (NTP) or the U.S. Occupational Safety and Health Act (OSHA).
<b>Mutagenic effects</b>	No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen.
<b>Reproductive effects</b>	No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a reproductive toxin.
<b>Teratogenic effects</b>	No component of this product at levels greater than 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.

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## 12. Ecological information

### Ecotoxicity

No testing has been performed by the manufacturer.

<b>Persistence/degradability</b>	Inherently biodegradable
<b>Mobility</b>	Spillages may penetrate the soil causing ground water contamination.
<b>Bioaccumulative potential</b>	This product is not expected to bioaccumulate through food chains in the environment.
<b>Other ecological information</b>	Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

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## 13. Disposal considerations

### Waste information

Avoid contact of spilled material and runoff with soil and surface waterways. Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste. Use only approved transporters, recyclers, treatment, storage or disposal facilities. Dispose of in accordance with all applicable local and national regulations.

[Consult your local or regional authorities.](#)

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## 14. Transport information

Not classified as hazardous for transport (DOT, TDG, IMO/IMDG, IATA/ICAO)

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## 15. Regulatory information

### U.S. Federal regulations

**United States inventory (TSCA 8b):** All components are listed or exempted.

This product is not regulated under Section 302 of SARA and 40 CFR Part 355.

**SARA 311/312 MSDS distribution - chemical inventory - hazard identification:** Brayco 460: Immediate (Acute) Health Hazard

#### SARA 313

##### Form R - Reporting requirements

This product does not contain any hazardous ingredients at or above regulated thresholds.

##### Supplier notification

This product does not contain any hazardous ingredients at or above regulated thresholds.

CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4):: This material is not regulated under CERCLA Sections 103 and 107.

### State regulations

#### Massachusetts Substances

**Massachusetts RTK:** The following components are listed: MINERAL OIL, PETROLEUM DISTILLATES, HYDROTREATED LIGHT NAPHTHENIC

#### New Jersey Hazardous Substances

**New Jersey Hazardous Substances:** None of the components are listed.

#### Pennsylvania RTK Hazardous Substances

**Pennsylvania RTK:** None of the components are listed.

**California Prop 65:** No products were found

### Inventories

**Canada inventory:** All components are listed or exempted.

**Europe inventory:** All components are listed or exempted.

**Australia inventory (AICS):** All components are listed or exempted.

**China inventory (IECSC):** All components are listed or exempted.

**Japan inventory (ENCS):** All components are listed or exempted.

**Korea inventory (KECI):** All components are listed or exempted.

**Philippines inventory (PICCS):** All components are listed or exempted.

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## 16. Other information

### Label requirements

CAUTION!

MAY CAUSE EYE IRRITATION.  
MAY CAUSE SKIN IRRITATION.  
MAY CAUSE RESPIRATORY TRACT IRRITATION.

### HMIS® Rating :

**Health** - 1  
**Flammability** 1  
**Physical Hazard** 0  
**Personal protection** B

**National Fire Protection Association (U.S.A.)**



### History

**Date of issue** 07/23/2007.  
**Date of previous issue** 11/16/2006.  
**Prepared by** Product Stewardship

### Notice to reader

*All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.*

*The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from us.*

*It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken.*

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