Appendix B
Safety Data Sheets for Study Materials

Safety data sheet for fuel oil no. 6 samples:

fuel oil no. 6

1 Identification

GHS Product Identifier

BT-ddmmyy-##, BM-ddmmyy-##, MM-ddmmyy-##

Other means of identification

Fuel oil no. 6; Six Oil; Bunker C; High Sulfur Residual Fuel Oil; Low Sulfur Residual Fuel Oil; Residual Fuel Oil

Recommended use of the chemical and restriction on use

Fuel

Supplier's details

University of Texas at Austin
Building 133
10100 Burnet Rd
Austin, TX 78758
512-983-6988 c

Emergency phone number

800-535-5053 (INFOTRAC)

2 Hazard(s) identification

Classification of the substance or mixture

Carcinogenicity - category 1B
Aspiration hazard - category 1
Acute toxicity - category 4
Hazardous to the aquatic environment (acute) - category 1
Hazardous to the aquatic environment (chronic) - category 1
Reproductive toxicity - category 2
Specific target organ toxicity (repeated exposure) - category 2
Flammable liquid - category 3

GHS label elements

Danger

May cause cancer

May be fatal if swallowed and enters airways

Harmful if inhaled

Very toxic to aquatic life with long lasting effects

Suspected of damaging fertility or the unborn child

May cause damage to organs through prolonged or repeated exposure

Flammable liquid and vapour

Do not breathe dust/fume/gas/mist/vapours/spray.

Obtain special instructions before use.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

IF exposed or concerned

Call a POISON CENTER or doctor/physician.

IF SWALLOWED

Immediately call a POISON CENTER or doctor/physician.

Do NOT induce vomiting.

3 Composition/information on ingredients

Description	CAS Number	EINECS Number	%	Note
Fuel oil, residual; Heavy Fuel oil; [The liquid product from various refinery streams, usually residues. The composition is complex and varies with the source of the crude oil.]	68476-33-5		100	
hydrogen sulfide	7783-06-4		0	may be present in trace quantities (by weight)

4 First-aid measures

Description of necessary first-aid measures

Inhalation

- If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
- If casualty is unconscious and:

  Breathing

  – place in the recovery position. Administer oxygen if necessary.

Skin Contact

- Remove contaminated clothing and footwear and dispose of safely.
- Wash affected area with soap and water.
- Never use gasoline, kerosene or other solvents for washing of contaminated skin.
- For minor thermal burns: Cool the burn. Hold the burned area under cold running water for at least five minutes, or until the pain subsides. However, body hypothermia must be avoided.
- Do not put ice on the burn; Remove non-sticking garments carefully. DO NOT attempt to remove portions of clothing glued to burnt skin but cut round them.

Eye Contact

- Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

Ingestion / Aspiration

- Do not induce vomiting.
- Do not give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed

Inhalation: Irritation of the respiratory tract due to excess fume, mists or vapour exposure. Harmful if inhaled.
Skin Contact: Dry skin, irritation in case of repeated or prolonged exposure. May cause burn in case of contact with

product at high temperature
Eye Contact: Slight irritation (unspecific) . May cause burn in case of contact with product at high temperature
Ingestion / Aspiration: May be fatal if swallowed and enters airways.

Indication of immediate medical attention and special treatment needed, if necessary

Inhalation

- If casualty is unconscious and:
  Not breathing
  – ensure that there is no obstruction to breathing and give artificial respiration by trained personnel. If necessary, give external cardiac massage and obtain medical assistance.
- Obtain medical assistance if breathing remains difficult.
- If there is any suspicion of inhalation of H2S:
  - Rescuers must wear breathing apparatus, belt and safety rope, and follow rescue procedures.
  - Remove casualty to fresh air as quickly as possible.
  - Immediately begin artificial respiration if breathing has ceased.
  -Provision of oxygen may help.
  - Obtain medical advice for further treatment.

Skin Contact

- Seek medical attention if skin irritation, swelling or redness occurs.
- When using high-pressure equipment, injection of product can occur. If high-pressure injuries occur, immediately seek professional medical attention. Do not wait for symptoms to develop
- Seek medical attention in all cases of serious burns

Eye Contact

- If irritation, blurred vision or swelling occurs and persists, obtain medical advice from a specialist.
- If hot product is splashed into the eye, it should be cooled immediately to dissipate heat, under cold running water. Immediately obtain specialist medical assessment and treatment for the casualty.

Ingestion / Aspiration

- Ask for medical assistance

5 Fire-fighting measures

Suitable extinguishing media

Extinguishing Media

- Foam (Specifically trained personnel only)
- Water fog (Specifically trained personnel only)
- Dry chemical powder
- Carbon dioxide
- Other inert gases (subject to regulations)
- Sand or earth

Unsuitable Extinguishing Media

- Do not use direct water jets on the burning product; they could cause splattering and spread the fire.
- Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific hazards arising from the chemical

Product specific hazards and other issues

- This substance will float and can be reignited on surface water.

Combustion Products

- Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and

gases, including carbon monoxide, H2S, SOx (sulfur oxides) or sulfuric acid and unidentified organic and inorganic compounds.

Special protective actions for fire-fighters

Protective Equipment for Firefighters

- In case of a large fire or in confined or poorly ventilated spaces wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

- Small spillages: normal antistatic working clothes are usually adequate. Large spillages: full body suit of chemically resistant and antistatic material, if necessary heat resistant and insulated.
- Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons. Note: gloves made of PVA are not water-resistant, and are not suitable for emergency use.If contact with hot product is possible or anticipated, gloves should be heat-resistant and thermally insulated.
- Work helmet. Antistatic non-skid safety shoes or boots, if necessary heat-resistant.
- Goggles or face shield, if splashes or contact with eyes is possible or anticipated.
- Respiratory protection: A half or full-face respirator with filter(s) for organic vapours/H2S or a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

Environmental precautions

- Stop or contain leak at the source if safe to do so. Avoid direct contact with released material. Stay upwind. In case of large spillages, alert occupants in downwind areas.
- Keep non-involved personnel away from the area of spillage. Alert emergency personnel.Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency.
- It is recommended to eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares).
- When the presence of dangerous amounts of H2S around the spilled product is suspected or proved, additional or special actions may be warranted, including access restrictions, use of special protection equipment, procedures and personnel training.
- If required, notify relevant authorities according to all applicable regulations.

Methods and materials for containment and cleaning up

Spillages onto land

- Prevent product from entering sewers, rivers, waterways or other bodies of water.
- If necessary dike the product with dry earth, sand or similar non-combustible materials.
- Let hot product cool down naturally
- Large spillages may be cautiously covered with foam, if available, to limit fire risk. Do not use direct jets
- When inside buildings or confined spaces ensure adequate ventilation.
- Absorb spilled product with suitable non-combustible materials.
- Collect free product with suitable means. Collect recovered product and other contaminated materials in suitable containers for recycle, recovery or safe disposal.
- In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Spillages in water or at sea

- Product less dense than water: In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents
- If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable

mechanical means.
- The use of dispersants should be advised by an expert, and, if required, approved by local authorities.
- Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal.
- Product which is denser than water will sink to the bottom, and usually no intervention will be feasible. If possible, collect the product and contaminated materials with mechanical means, and store/dispose of according to relevant regulations. In special situations (to be assessed on case-by case basis, according to expert judgement and local conditions), excavations of trenches on the bottom to collect the product, or burying the product with sand may be a feasible option.

Additional information
- Note: recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions. For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.
- Concentration of H2S in tank headspaces may reach hazardous values, especially in case of prolonged storage. This situation is especially relevant for those operations which involve direct exposure to the vapours in the tank.
- Spillages of limited amounts of products, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which are unlikely to entail exposure to dangerous concentrations. As H2S has a density greater than ambient air, a possible exception may regard the build-up of dangerous concentrations in specific spots, like trenches, depressions or confined spaces. In all these circumstances, however, the correct actions should be assessed on a case-by-case basis.

7 Handling and storage

Precautions for safe handling

General Information
- Obtain special instructions before use
- Ensure that all relevant regulations regarding handling and storage facilities of flammable products are followed.
- A specific assessment of inhalation risks from the presence of H2S in tank headspaces, confined spaces, product residue, tank waste and waste water, and unintentional releases must be made to help determine controls appropriate to local circumstances.
- It is recommended to keep away from sparks/open flames/hot surfaces.
  - No smoking.
- Use and store only outdoors or in a well-ventilated area.
- Avoid contact with the product.
- Avoid release to the environment.

Handling
- Take precautionary measures against static electricity.
- Ground/bond containers, tanks and transfer/receiving equipment.
- The vapour is heavier than air. Beware of accumulation in pits and confined spaces.
- Do not breathe fume/ mist/ vapours
- Avoid contact with skin. Precautions should be taken to avoid skin burns when handling hot product.
- Use adequate personal protective equipment as required.
- For more information regarding protective equipment and operational conditions see Exposure scenarios.

Conditions for safe storage, including any incompatibilities

Storage
- Storage area layout, tank design, equipment and operating procedures must comply with the relevant European, national or local legislation.
- Storage installations should be designed with adequate bunds so as to prevent ground and water pollution in case

of leaks or spills.

- Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations.
- Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulphide (H_2S) and flammability.
- Store separately from oxidising agents.

Recommended and Unsuitable Materials for Storage

- Recommended materials: For containers, or container linings use mild steel, stainless steel.
- Unsuitable materials: some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Compatibility should be checked with the manufacturer

Container Advice

If the product is supplied in containers:

- Keep only in the original container or in a suitable container for this kind of product.
- Store in a well-ventilated place.
- Keep containers tightly closed and properly labelled.
- Empty containers may contain combustible product residues. Do not weld, solder, drill, cut or incinerate empty containers, unless they have been properly cleaned.

Hygiene measures

- Ensure that proper housekeeping measures are in place.
- Contaminated materials should not be allowed to accumulate in the workplaces and should never be kept inside the pockets.
- Keep away from food and beverages.
- Do not eat, drink or smoke while using this product.
- Wash the hands thoroughly after handling.
- Change contaminated clothes at the end of working shift.

8 Exposure controls/personal protection

Control parameters

This section is not required.

Appropriate engineering controls

This section is not required.

Individual protection measures

This section is not required.

9 Physical and chemical properties

Physical and chemical properties

Physical state at 20°C and 1013 hPa	Liquid
Form	Viscous, black
Odor	Heavy petroleum/asphalt type odor
Substance type	Petroleum product
Melting / freezing point	ND
Boiling point	ND
Specific gravity	ND (typically .876 to 1.03)
Vapor pressure	ND
Flash point	>=60°C
Kinematic viscosity	15 - 50 mm^2/s at 100°C

Flammability	combustible liquid
Solubility in water	ND (low)
Evaporation rate	ND (slow)
pH	ND
Pour point	ND (typically <30°C)

10 Stability and reactivity

Reactivity

Material is not self-reacting.
Flammable concentrations may be present in air.
Compound can react with oxidizing materials.

Chemical stability

This is a stable material that is combustible liquid (OSHA/GHS hazard category 4).
Stable during transport.

Possibility of hazardous reactions

Hazardous polymerization will not occur.

Conditions to avoid

Avoid high temperatures, open flames, sparks, static electricity, welding, smoking and other ignition sources.

Incompatible materials

Keep away from strong oxidizers such as nitric and sulfuric acids.

Hazardous decomposition products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke). Under extreme upset conditions hydrogen sulfide may evolve.

11 Toxicological information

Numerical measures of toxicity (such as acute toxicity estimates)

Acute toxicity:

oral:	LD50 4320 - 5270 mg/kg bw (rat)
inhalation:	LC50 (4 h) 4.1 - 4.5 mg/L air (rat)
dermal:	LD50 2000 mg/kg bw (rabbit)

Repeated dose toxicity (dermal):
NOAEL (rat): 1 - 106 mg/kg bw/day
LOAEL (rat): 0.01 - 1 mg/kg bw/day

Developmental toxicity/teratogenicity:
maternal and developmental toxicity NOAEL = 333 mg/kg bw/day (rat)

Other information

Moderately irritating to skin following 24 hr (occluded) contact.

Moderate potential to evoke photoirritation.

12 Ecological information

Toxicity

Short–term toxicity to fish:
LL50 (4 days) 79 mg/L

Short–term toxicity to aquatic invertebrates:
EL50 (48 h) 220 µg/L
]EL50 (24 h) 2.56 mg/L
EL0 (48 h) 50 µg/L
EL100 (48 h) 1.35 mg/L

Toxicity to aquatic algae and cyanobacteria:
EL50 (72 h) 320 µg/L
NOELR (72 h) 50 µg/L

Acute toxicity:

oral:	LD50 4 320 - 5 270 mg/kg bw (rat)
air:	LC50 (4 h) 4.1 - 4.5 mg/L air (rat)
dermal:	LD50 2 000 mg/kg bw (rabbit)

Repeated dose toxicity:

dermal:	NOAEL (rat): 1 - 106 mg/kg bw/day
	LOAEL (rat): 0.01 - 1 mg/kg bw/day

Hazard for predators (secondary poisoning):
PNEC oral 66.7 mg/kg food

Persistence and degradability

Hydrolysis (low potential to hydrolyze):

Hydrolysis is a reaction in which a water molecule or hydroxide ion substitutes for another atom or group of atoms present in a chemical resulting in a structural change of that chemical. Potentially hydrolyzable groups include alkyl halides, amides, carbamates, carboxylic acid esters and lactones, epoxides, phosphate esters, and sulfonic acid esters (Neely, 1985). The lack of a suitable leaving group renders compounds resistant to hydrolysis.

The chemical constituents that comprise the heavy fuel oil category consist entirely of carbon and hydrogen and do not contain hydrolyzable groups. As such, they have a very low potential to hydrolyze. Therefore, this degradative process will not contribute to their removal from the environment.

Percent distribution in media:

The distribution of the substance in the environmental compartments, air, water, soil, and sediment, has been calculated using the PETRORISK Model.Based on the regional scale exposure assessment, the multimedia distribution of the substance in 4.55% to air, 0.01% to water, 27.63% to sediment and 67.81% to soil.

13 Disposal considerations

Disposal methods

Consult federal, state and local waste regulations to determine appropriate disposal options. May be considered a hazardous waste if disposed. Personnel handling waste containers should follow precautions provided in section 7.

Follow licensure and regulations for transport of hazardous material and hazardous waste as applicable.

14 Transport information

UN Number

UN 3082. See Additional transport information 07.

UN Proper Shipping Name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (residual fuel oil) See Additional transport information 07.

Transport hazard class(es)

9 Miscellaneous dangerous substances and articles.

Packing group, if applicable

III

Environmental hazards

9 Miscellaneous dangerous substances and articles. Environmentally hazardous substance mark. See Additional transport information 03.

Special precautions for user

Preamble

- 0.1The transportation of dangerous goods (by land, water or air) is a specialized professional field. Dangerous goods transport is regulated by an extensive body of recommendations, regulations, rules and agreements to ensure an adequate and harmonised level of safety for man and environment. Whereas some of these requirements have been adopted as European Union legislation (see reference), others are legally binding international treaties or sector agreements. They cover all the relevant technical aspects involved in the transport of dangerous goods (e.g. choice of equipment, labelling, documentation, packaging design, testing procedures, operating procedures etc.).
- 0.2In addition to legal obligations discussed in the previous paragraph, Member states will also have in place detailed binding regulations governing the general conduct of transport activities, including licensing and inspection of vehicles, the authorization of drivers and other personnel, and issues relating to the rules of the road. There may also be specific national exceptions and requirements.
- 0.3The legal framework and its accompanying detailed provisions will specify which actions are necessary/mandatory, advisable or forbidden. Extensive repetition of this background information is not practicable in a safety data sheet, and could make the document too long and difficult to read and understand, especially in an emergency when clear, brief information is needed.
- 0.4 The consideration of this background information enables the content of the safety data sheet to be concentrated on the identification of a product's proper shipping name and its hazard classification. Where it is relevant, other information may be added. This information will act as key for the professional for retrieving the necessary specific information in the relevant body of transport codes, rules and regulations.
- 0.5Substances in this category may be classified differently. Factors affecting classification include composition, closed flash point, initial boiling point and aquatic toxicity. The differences are explained in additional transport information paragraphs that have been numbered.

Additional transport information 03

The substance will require a marine pollutant mark / environmentally hazardous substance mark because it is classified as Environmentally hazardous substance - Category: Chronic 2.

Additional transport information 07

The proper shipping name UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (residual fuel oil) is applied to substances with a closed flash point of greater than 60°C for transport by land (ADR/RID), marine (IMDG) and air (ICAO/IATA). UN 3082 can be used provided the substance cannot be assigned to other entries in classes 1 – 8, and provided the substance cannot be assigned to other entries in class 9.

15 Regulatory information

Safety, health and environmental regulations specific for the product in question

U.S. Federal, State, and Local Regulatory Information

Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other federal, state, or local regulations; consult those regulations applicable to your facility/operation.

OSHA Hazard Communication Standard
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning And Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	Yes
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Clean Water Act (Oil Spills)
Any spill or release of this product to "navigable waters" (Essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) or, if not practical, the U.S. Coast Guard with follow up to the National Response Center, as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA Section 103 and SARA Section 304 (Release to the Environment)
The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts this material. This product does not contain any chemicals subject to the reporting requirements of CERCLA Section 103 or SARA 304.

EPA Notification (Oil Spills)
If the there is a discharge of more than 1,000-gallons of oil into or upon navigable waters of the United States, or if it is the second spill event of 42 gallons or more of oil into water within a twelve (12) month period, a written report must be submitted to the Regional Administrator of the EPA within sixty days of the event.

Pennsylvania Right to Know Hazardous Substance list and New Jersey Right to Know Hazardous Substance List:
The following product components are cited in the Pennsylvania Special Hazardous Substance List and in the New Jersey Right to Know Hazardous Substance List, and are present at levels which require reporting.

Component	CAS	Amount
No. 6 Fuel Oil	68476-33-5	100%
Hydrogen Sulfide	7783-06-4	Trace

U.S. Toxic Substances Control Act
All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

16 Other information

“known” recipe safety data sheet:

known recipe

1 Identification

GHS Product Identifier

KR-mmddyy-##

Other means of identification

A mixture of n-octane and n-nonadecane.

Recommended use of the chemical and restriction on use

This material was created to be analyzed using a number of vapor pressure measurement methods. Nonadecane is an aromatic ingredient which may be used fragrance compounds according to legal and IFRA guidelines.

Do not use for food, drug, pesticide or biocidal product.

Supplier's details

University of Texas at Austin
Building 133
10100 Burnet Rd
Austin, TX 78758
512-983-6988 c

Emergency phone number

800-535-5053 (INFOTRAC)

2 Hazard(s) identification

Classification of the substance or mixture

Flammable liquid - category 2
Aspiration hazard - category 1
Skin irritation - category 2
Specific target organ toxicity (single exposure) - category 3
Hazardous to the aquatic environment (acute) - category 1
Hazardous to the aquatic environment (chronic) - category 1
Eye irritation - category 2
Acute toxicity - category 4

GHS label elements

Danger

May be fatal if swallowed and enters airways

Highly flammable liquid and vapour

Causes skin irritation

Very toxic to aquatic life

Very toxic to aquatic life with long lasting effects

May cause drowsiness or dizziness

Causes serious eye irritation

Harmful if swallowed

Harmful in contact with skin

Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Use explosion-proof electrical/ventilating/lighting/etc/equipment.

IF SWALLOWED

Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN (or hair)

Remove/Take offimmediately all contaminated clothing.

Rinse skin with water/shower.

Store locked up.

Dispose of contents/container to an approved waste disposal plant

Wash hands thoroughly after handling.

Store away from incompatible materials.

3 Composition/information on ingredients

Description	CAS Number	EINECS Number	%	Note
n-octane	111-65-9		20	
n-nonadecane	629-92-5		80	

4 First-aid measures

Description of necessary first-aid measures

Skin contact

- Immediately remove contaminated clothing.
- Instantly wash with water and soap for 15 minutes and rinse thoroughly.
- Obtain medical attention.

Ingestion

- Call a physician or Poison Control Center immediately.
- Do not induce vomiting.
- If vomiting occurs naturally, have victim lean forward.

Eye Contact

- Remove contact lenses if present and easy to do.
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- Obtain medical attention.

Inhalation

- Immediate medical attention is required.
- Move to fresh air.

Most important symptoms/effects, acute and delayed

Inhalation

- Breathing difficulties.
- Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and

vomiting.
- Risk of serious damage to the lungs.

Indication of immediate medical attention and special treatment needed, if necessary

Inhalation
- Immediate medical attention is required.
- If not breathing, give artificial respiration.
  - Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
- In case of unconsciousness bring patient into stable side position for transport to medical facility.

Ingestion
- Call a physician or Poison Control Center immediately.
- If not breathing, give artificial respiration.
  - Do not use mouth-to-mouth method if victim ingested the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

5 Fire-fighting measures

Suitable extinguishing media

- CO2, extinguishing powder or water spray.
- Fight larger fires with water spray or alcohol-resistant foam.

Unsuitable extinguishing media (for safety reasons):
- Water with a full water jet; it may scatter and spread fire.

Specific hazards arising from the chemical

- Flammable.
- Containers may explode when heated.
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Do not allow run-off from fire fighting to enter drains or water courses.
- Vapors are heavier than air and may spread along floors.
- Fire may produce irritating, corrosive and/or toxic gases.
- Static charges generated by emptying package in or near flammable vapor may cause flash fire.
- Carbon oxides may arise.

Special protective actions for fire-fighters

- Stay in danger area only with self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode.
- Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.
- Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
- Structural firefighters protective clothing will only provide limited protection.
- Use water spray to cool unopened containers.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

- Wear protective equipment.
- Keep unprotected persons away.
- Remove all sources of ignition.
- Ensure adequate ventilation; ventilate closed spaces before entering them.
- Take precautionary measures against static discharges.

- Use spark-proof tools and explosion-proof equipment.
- Avoid contact with skin or inhalation of spillage, dust or vapor.
- Avoid dust formation.

Environmental precautions

- Do not allow product to reach sewage system or water bodies.
- Prevent material from reaching holes and cellars.
- Inform authorities if product reaches water or sewage system.
- Retain and dispose of contaminated wash water.
- The product is immiscible with water and will spread on the water surface.

Methods and materials for containment and cleaning up

- Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Ensure adequate ventilation.
- Keep in suitable, closed containers for disposal.

7 Handling and storage

Precautions for safe handling

- Keep containers tightly sealed.
- Handle containers with care. Open slowly in order to control possible pressure release.
- Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid prolonged exposure.
- Ensure adequate ventilation.
- Keep away from open flames, hot surfaces and sources of ignition.
- Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.
- Use only non-sparking tools.
- Use explosion-proof equipment.

Conditions for safe storage, including any incompatibilities

- Store in flammables area.
- Keep away from heat and ignition sources - do not smoke.
- Protect against electrostatic charges.
- Keep containers tightly closed in a dry, cool and well-ventilated place.

8 Exposure controls/personal protection

Control parameters

American Conference of Governmental Industrial Hygienists (ACGIH) TLV: TWA 300 ppm

Occupational Safety and Health Administration (OSHA) PEL: 500 ppm (2350 mg/m3)

National Institute for Occupational Safety and Health (NIOSH) **IDLH:** 1000 ppm
REL: TWA 75 ppm (350 mg/m3)
Ceiling 385 ppm (1800 mg/m3) (15 min)

Notes: TLV=threshold limit value; PEL=permissible exposure limit; IDLH=immediately dangerous to life or health; REL=recommended exposure limit; TWA=time-weighted average

Appropriate engineering controls

- Ensure that eyewash stations and safety showers are close to the workstation location.
- Ensure adequate ventilation, especially in confined areas.

- Use explosion-proof electrical/ventilating/lighting/equipment.

Individual protection measures

Eye/face Protection:

- Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection:

- Wear appropriate (chemical resistant) protective gloves and clothing to prevent skin exposure.

Respiratory Protection:

- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.
- Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures:

- Handle in accordance with good industrial hygiene and safety practice.

9 Physical and chemical properties

Physical and chemical properties

Physical State White solid at room temperature; clear liquid when warmed
Appearance Colorless
Odor Petroleum distillates
Odor Threshold No information available
pH Not applicable
Melting Point/Range -57 to 34°C / -70.6 to 93°F
Boiling Point/Range 125 - 330 °C / 257 - 626 °F @ 760 mmHg
Flash Point 13 to 100 °C / 55.4 to 212 °F
Evaporation Rate <0.6 (Butyl Acetate = 1.0)
Flammability (solid, gas) Not applicable
Flammability or explosive limits
Upper 6.5 vol %
Lower <0.8 vol %
Vapor Pressure <14 mbar @ 20 °C
Vapor Density >3.9
Specific Gravity 0.708 to 0.786 @ 25 °C
Solubility Insoluble in water
Partition coefficient; n-octanol/water No data available
Autoignition Temperature <220 °C / <428 °F
Decomposition Temperature No information available
Viscosity <0.55 mPa.s at 20 °C

10 Stability and reactivity

Reactivity

- Vapours may form explosive mixture with air.

Chemical stability

- Stable under normal conditions.

Possibility of hazardous reactions

- None under normal processing.
- Hazardous polymerization does not occur.

Conditions to avoid

- Incompatible products.

- Excess heat (temperatures above 200°C).
- Keep away from open flames, hot surfaces and sources of ignition.

Incompatible materials

- Strong oxidizing agents.
- Various plastics.

Hazardous decomposition products

- Carbon monoxide (CO)
- Carbon dioxide (CO2)

11 Toxicological information

Toxicological (health) effects

- Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.
- Causes skin irritation.
- Slight eye irritation.
- Aspiration may cause pulmonary oedema and pneumonitis.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation of high vapor concentrations of octane may cause symptoms like headache, dizziness,tiredness, nausea and vomiting.
- Octane is irritating to eyes and skin.

Numerical measures of toxicity (such as acute toxicity estimates)

Derived No-Effect Level (DNEL) for workers for octane

- Inhalation (long-term):
  - 2035 mg/m³
- Dermal (long-term):
  - 773 mg/kg bw/day

Acute toxicity of octane

- Oral:
  - LD50 5000 mg/kg bw (rat)
- Inhalation:
  - LC50 (4 h) 24.88 mg/L air (rat)
  - LC50 (4 h) 118 g/m3 (rat)
  - LC50 (4 h) 25260 ppm (rat)
- Dermal:
  - LD50 2000 mg/kg bw (rabbit)

Repeated dose toxicity of octane

- Inhalation:
  - NOAEC 8.4 - 24.3 mg/L air (rat)

12 Ecological information

Toxicity

Fish (short-term)

- The (Q)SAR estimated freshwater fish 96-h LL50 (Lethal Loading Rate) value for octane is 2.587 mg/L based on mortality.

Fish (long-term)

- The (Q)SAR estimated freshwater fish 28-day NOELR (Lowest Observed Effect Loading Rate) value for octane is 0.579 mg/L based on growth.

Aquatic invertebrates (short-term)

- Octane exhibited a 48-hour EC50 value of 0.3 mg/L, based on measured data, and an EL50 value of approximately 0.66 mg/L, based on nominal data, with Daphnia magna.
- EC50 of octane = 0.38 mg/L, 48h (water flea)

Aquatic invertebrates (long-term)

- Under the conditions of the study a NOELR and an EL50 of 1 and 1.6 mg/L, respectively, was determined for hydrocarbons, C7-C9, n-alkanes, isoalkanes, cyclics, with Daphnia magna.

Aquatic algae and cyanobacteria

- The (Q)SAR-estimated freshwater algae 72-h EL50 (Effect Loading Rate) value for octane is 2.084 mg/L based on biomass.
- The (Q)SAR-estimated freshwater algae 72-h NOELR (No Observed Effect Loading Rate) value for octane is 0.466 mg/L based on biomass.

Aquatic microorganisms

- The estimated protozoan, Tetrahymena pyriformis, 48-hr EL50 value for n-octane is 10.86 mg/L based on growth inhibition.
- EC50 of octane = 890 mg/L 30 min

Terrestrial plants

- The lettuce plant (Lactuca sativa) did not exhibit toxic effects when exposed to octane added to soil or aqueous nutrient solutions containing octane. Results from the soil and nutrient solution tests are summarized as follows: Soil: Days 7 and 14 EL50 >1000 mg/kg soil (dry weight), based on nominal concentrations. No effects at the highest concentration tested. Nutrient Solution: Day 16 or 21 EC50 = no effects at limit of solubility under the test conditions.

Persistence and degradability

Phototransformation in air for octane:

- Half-life, as mediated by hydroxyl radical (OH-) attack is calculated as 15.493 hours based on a 12-hour day (the 12-hour day half-life value normalizes degradation to a standard day light period during which hydroxyl radicals needed for degradation are generated). The half-life was calculated based on an OH- reaction rate constant of 8.2844 E-12 cm3/molecule-sec and an OH- concentration of 1.5E6 OH/cm3.
- Half-life, normalized to a 12-hour day, is 3.7 days, based on 12-hour light / 12-hour dark periods and a concentration of 5E5. The half-life is normalized to a 12-hour day because atmospheric oxidation reactions only take place in the presence of sunlight.

Biodegradation in water for octane:

- Exhibited greater than 60% biodegradation in less than 28 days and although the test guideline was not a ready biodegradation test, the overall results suggest that it would meet the criteria for ready biodegradation.

Bioaccumulative potential

Aquatic species for octane:

- Under the conditions of one study, a BCF of 198.7 was measured with the mussel, Mytilus edulis, after a 105 minute exposure to the test substance. Based on the maximum uptake rate of algae by mussels over a 105 minute exposure period, the test solution aqueous EL50 was 0.12 mg/L and the tissue EC50 was 24.6 mg/kg (wet weight)

Mobility in soil

- Koc for octane = 436.8 (calculated)
- log(Kow) for octane = 5.18

Other adverse effects

- Octane is very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

13 Disposal considerations

Disposal methods

- Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.
- Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

- Do not discharge into drains, water courses or onto the ground.
- Do not allow this material to drain into sewers/water supplies.
- Do not contaminate ponds, waterways or ditches with chemical or used container.

14 Transport information

UN Number

Octane: UN 1262
Nonadecane: no UN number

UN Proper Shipping Name

Octanes

Transport hazard class(es)

Octane: 3
Nonadecane: Not regulated as dangerous goods (DOT, IMDG, IATA)

Packing group, if applicable

Octane: II

Environmental hazards

Octane:

- Marine pollutant.
- Environmentally hazardous.

Nondecane: Not regulated as dangerous goods (DOT, IMDG, IATA).

Special precautions for user

Transport by land:
Octane: tunnel restriction code D/E
Transport by sea:
Octane EmS codes:
Fire: F-E (non-water-Reactive flammable liquids)
Spill: S-E (flammable liquids (floating on water))

15 Regulatory information

Safety, health and environmental regulations specific for the product in question

- SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
- SARA 311/312 Hazards: Fire Hazard, Acute Health Hazard
- Massachusetts Right To Know Components include Octane CAS-No. 111-65-9 Revision Date 1993-04-24
- Pennsylvania Right To Know Components include Octane CAS-No. 111-65-9 Revision Date 1993-04-24
- New Jersey Right To Know Components include Octane CAS-No. 111-65-9 Revision Date 1993-04-24
- California Prop. 65 Components This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm

16 Other information

Castrol Brayco Micronic 756 safety data sheet:

Material Safety Data Sheet

1. Product and company identification

Product name	Brayco Micronic 756
MSDS #	451709
Historic MSDS #:	27007
Code	451709-US03
Product use	Hydraulic fluid For specific application advice see appropriate Technical Data Sheet or consult our company representative.
Manufacturer	Castrol Industrial North America, Inc. 150 W. Warrenville Road Naperville, IL 60563
Supplier	Castrol Industrial North America, Inc. 150 W. Warrenville Road Naperville, IL 60563 Product Information: +1-877-641-1600
EMERGENCY SPILL INFORMATION:	1 (800) 424-9300 CHEMTREC (USA)

2. Hazards identification

Physical state	Liquid.
Color	Red.
Emergency overview	CAUTION ! COMBUSTIBLE LIQUID AND VAPOR. MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. Combustible liquid. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis. Keep away from heat, sparks and flame. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	Dermal contact. Eye contact. Inhalation.
Potential health effects	
Eyes	May cause eye irritation.
Skin	May cause skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
Inhalation	May cause respiratory tract irritation.
Ingestion	Ingestion may cause gastrointestinal irritation and diarrhea.

See toxicological information (Section 11)

3. Composition/information on ingredients

Ingredient name	CAS #	%
Base oil - highly refined	Varies	75 - 80
Distillates (Petroleum) hydrotreated light	64742-47-8	5 - 10
Base oil - highly refined	Proprietary	5 - 10

4. First aid measures

Eye contact
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Skin contact
Immediately wash exposed skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

Inhalation
If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Ingestion
Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If potentially dangerous quantities of this material have been swallowed, call a physician immediately. Get medical attention if symptoms occur.

Notes to physician
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discolored and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimize tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

5. Fire-fighting measures

Flammability of the product
Combustible liquid.

Flash point
Closed cup: 82°C (179.6°F) [Pensky-Martens.]

Fire/explosion hazards
In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Extinguishing media

Suitable
Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable
Do not use water jet.

Fire-fighting procedures
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous combustion products
Combustion products may include the following:
carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)

Protective clothing (fire)
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental release measures

Personal precautions
No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Large spill
Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small spill	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7. Handling and storage

Handling	Put on appropriate personal protective equipment (see Section 8). Workers should wash hands and face before eating, drinking and smoking. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.
Storage	Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Occupational exposure limits
Base oil - highly refined	**ACGIH TLV (United States).** TWA: 5 mg/m³ 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction **NIOSH REL (United States).** TWA: 5 mg/m³ 10 hours. Issued/Revised: 6/1994 Form: Mist STEL: 10 mg/m³ 15 minutes. Issued/Revised: 6/1994 Form: Mist **OSHA PEL (United States).** TWA: 5 mg/m³ 8 hours. Issued/Revised: 6/1993
Distillates (Petroleum) hydrotreated light	**OSHA PEL (United States). Absorbed through skin.** STEL: 10 mg/m³ 15 minutes. Form: Mist TWA: 5 mg/m³ 8 hours. Form: Mist **ACGIH TLV (United States). Absorbed through skin.** TWA: 200 mg/m³, (as total hydrocarbon vapor) 8 hours. Issued/Revised: 1/2003
Base oil - highly refined	**ACGIH (United States).** TWA: 5 mg/m³ 8 hours. Form: Mineral oil, mist **OSHA (United States).** TWA: 5 mg/m³ 8 hours. Form: Mineral oil, mist

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Some states may enforce more stringent exposure limits.

Control Measures	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.
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 adequate ventilation. In accordance with good industrial hygiene and safety work practices, airborne exposures should be controlled to the lowest extent practicable.

Castrol Brayco Micronic 756 safety data sheet (cont'):

Hands	The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

9. Physical and chemical properties

Physical state	Liquid.
Color	Red.
Odor	Oily [Slight]
Flash point	Closed cup: 82°C (179.6°F) [Pensky-Martens.]
Density	877 kg/m³ (0.877 g/cm³) at 15°C
Viscosity	Kinematic: 13.2 mm²/s (13.2 cSt) at 40°C
Solubility	insoluble in water.

10. Stability and reactivity

Stability and reactivity	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame).
Incompatibility with various substances	Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.

11. Toxicological information

Potential chronic health effects

Carcinogenicity	No known significant effects or critical hazards.

12. Ecological information

Ecotoxicity

No testing has been performed by the manufacturer.

13. Disposal considerations

Waste information	The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

NOTE: The generator of waste has the responsibility for proper waste identification (based on characteristic(s) or listing), transportation and disposal

14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	Packing group	Additional information
DOT Classification	NA1993	Combustible liquid, n.o.s. (Distillates (Petroleum) hydrotreated light)	Combustible liquid.	III	Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials. **Remarks** Not regulated in containers less than 119 gallons.
TDG Classification	Not regulated.	-	-	-	-
IMDG Classification	Not regulated.	-	-	-	-
IATA/ICAO Classification	Not regulated.	-	-	-	-

15. Regulatory information

U.S. Federal Regulations

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

SARA 302/304: No products were found.
SARA 311/312 Hazards identification: Fire hazard, 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): CERCLA: Hazardous substances.: methyl methacrylate: 1000 lbs. (454 kg);

State regulations

Massachusetts Substances: The following components are listed: MINERAL OIL, PETROLEUM DISTILLATES, HYDROTREATED LIGHT NAPHTHENIC; MINERAL OIL, PETROLEUM DISTILLATES, HYDROTREATED LIGHT PARAFFINIC

New Jersey Hazardous Substances: The following components are listed: MINERAL OIL (UNTREATED and MILDLY TREATED); MINERAL OIL (UNTREATED and MILDLY TREATED); MINERAL OIL (UNTREATED and MILDLY TREATED)

Pennsylvania RTK Hazardous Substances: None of the components are listed.

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

Other regulations

Canada inventory: All components are listed or exempted.

REACH Status	The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.
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.

16. Other information

Label requirements

CAUTION !

COMBUSTIBLE LIQUID AND VAPOR.
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

HMIS® Rating :

Health	1
Flammability	2
Physical Hazard	0
Personal protection	B

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

History

Date of issue 12/13/2013.

Date of previous issue 08/07/2012.

Prepared by Product Stewardship

Indicates information that has changed from previously issued version.

Notice to reader

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