



## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Use:** Automotive Engine Oil Additive

**Product Name:** NAMITEC Engine Oil Additive

**Company:**

E2 Holdings Pte Ltd

6 New Industrial Road, New Century Building

#02-04

Singapore 536199

**For More Information:** Call +65 8061 7839

## 2. HAZARDS IDENTIFICATION CLASSIFICATION

Not classified as hazardous according to Singapore regulatory guidelines.

**OTHER HAZARDS:** Heating at high temperature may release highly toxic and flammable hydrogen Sulfide (H<sub>2</sub>S). Do not attempt rescue without supplied-air respiratory protection.

## 3. COMPOSITION/ INFORMATION ON INGREDIENTS

**COMPONENTS** – Highly refined mineral oil (C15 - C50), Graphene nanoparticles

**AMOUNT** – 70 – 99.5 % weight, Graphene 0.2 %.

## 4. FIRST AID MEASURES

**In case of eye contact:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**In case of skin contact:** No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

**In case of Ingestion:** Do not induce vomiting. Get medical attention immediately.

**In case of Inhalation:** No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs. If

exposure to hydrogen sulfide (H<sub>2</sub>S) gas is possible during an emergency, wear an approved, positive pressure air-supplying respirator. If not breathing, give artificial respiration. Get immediate medical attention.

**Note to Physicians:** Administration of 100% oxygen and supportive care is the preferred treatment for poisoning by hydrogen sulphide gas. For additional information on H<sub>2</sub>S, see Chevron MSDS No. 301.

## 5. FIRE FIGHTING MEASURES

**Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Fire Fighting Instructions:** This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

**Combustion Products:** Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion. Combustion may form oxides of: Phosphorus, Sulfur

## 6. ACCIDENTAL RELEASE MEASURES

**Protective Measures:** Eliminate all sources of ignition in vicinity of spilled material.

**Spill Management:** Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.

**Reporting:** Report spills to local authorities as appropriate or required

## 7. HANDLING AND STORAGE

**General Handling Information:** Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water. Avoid contact with skin and eyes, inhalation of vapours and mists.

**Precautionary Measures:** Do not breathe gas. Wash thoroughly after handling. Keep out of the reach of children.

**Unusual Handling Hazards:** Toxic quantities of hydrogen sulphide (H<sub>2</sub>S) may be present in storage tanks and bulk transport vessels which contain or have contained this material. Persons opening or entering these compartments should first determine if H<sub>2</sub>S is present. See Exposure Controls/Personal Protection -Section 8. Do not attempt rescue of a person overexposed to H<sub>2</sub>S without wearing approved supplied-air or self-contained breathing equipment. If there is a potential for exceeding one-half the occupational exposure standard, monitoring of hydrogen sulphide levels is required. Since the sense of smell cannot be relied upon to detect the presence of H<sub>2</sub>S, the concentration should be measured by the use of fixed or portable devices.

**Static Hazard:** Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling,

gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.

**Container Warnings:** Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**GENERAL CONSIDERATIONS:** Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

**ENGINEERING CONTROLS:** Use in a well-ventilated area.

**PERSONAL PROTECTIVE EQUIPMENT Eye/Face Protection:** No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice. **Skin Protection:** No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.

**Respiratory Protection:** No respiratory protection is normally required. If material is heated and emits hydrogen sulphide, determine if airborne concentrations are below the occupational exposure limit for hydrogen sulphide. If not, wear an approved positive pressure air-supplying respirator. For more information on hydrogen sulphide, see Chevron MSDS No. 301. If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

**Color:** Greyish Black, Semi Translucent

**pH:** No data available

**Physical State:** Liquid

**Boiling Point:** No data available

**Solubility:** Soluble in hydrocarbons; insoluble in water

**Odor:** Petroleum odor

**Odor Threshold:** No data available

**Vapor Pressure:** No data available

**Vapor Density (Air = 1):** No data available

**Boiling Point:** No data available

**Solubility:** Soluble in hydrocarbons; insoluble in water

**Freezing Point:** No data available

**Melting Point:** No data available

**Density:** 0.876 kg/l @ 30°C

**Viscosity:** 16.50 mm<sup>2</sup>/s @ 100°C minimum

**Coefficient of Therm. Expansion / °C:** Not Applicable

**Evaporation Rate:** No data available

**Octanol/Water Partition Coefficient:** No data available

**Combustion Characteristics (Solids/Gases):** No data available

**Decomposition Temperature:** No data available

**Boiling Range:** No data available

**Flammable Properties:** Flashpoint: (Cleveland Open Cup) > 218 °C minimum

**Autoignition:** No data available

**Flammability (Explosive) Limits (% by volume in air):** Lower: Not Applicable Upper: Not Applicable

## 10. STABILITY AND REACTIVITY

**Reactivity:** May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

**Chemical Stability:** This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Incompatibility With Other Materials:** Not applicable

**Hazardous Decomposition Products:** Alkyl Mercaptans (Elevated temperatures), Hydrogen Sulphide (Elevated temperatures), Zinc (Elevated temperatures)

**Hazardous Polymerization:** Hazardous polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

### IMMEDIATE HEALTH EFFECTS

**Eye:** Not expected to cause prolonged or significant eye irritation.

**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

**Acute Dermal Toxicity:** The acute dermal toxicity hazard is based on evaluation of data for product components.

**Skin Irritation:** The skin irritation hazard is based on evaluation of data for product components.

**Skin Sensitization:** The skin sensitization hazard is based on evaluation of data for product components.

**Ingestion:** Not expected to be harmful if swallowed.

**Acute Oral Toxicity:** The acute oral toxicity hazard is based on evaluation of data for product components.

**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing. Hydrogen sulphide has a strong rotten-egg odor. However, with continued exposure and at high levels, H<sub>2</sub>S may deaden a person's sense of smell. If the rotten egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulphide causes irritation of the eyes, nose, and throat. Moderate levels can cause headache, dizziness, nausea, and vomiting, as well as coughing and difficulty breathing. Higher levels can cause shock, convulsions, coma, and death. After a serious exposure, symptoms usually begin immediately.

**Acute Inhalation Toxicity:** The acute inhalation toxicity hazard is based on evaluation of data for product components.

**Acute Toxicity Estimate:** Not Determined

## 12. ECOLOGICAL INFORMATION

**ECOTOXICITY** This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

**MOBILITY** No data available.

**PERSISTENCE AND DEGRADABILITY** This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

**POTENTIAL TO BIOACCUMULATE** Bioconcentration Factor: No data available. Octanol/Water Partition Coefficient: No data available

### 13. DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

### 14. TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

**DOT Shipping Description:** NOT REGULATED AS A HAZARDOUS MATERIAL UNDER 49 CFR

**IMO/IMDG Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

**ICAO/IATA Shipping Description:** NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available after the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

**E2 Holdings Pte Ltd**

**27 September 2023**