



CITGO Aquamarine® EP 2 Grease

Material Safety Data Sheet

CITGO Petroleum Corporation
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MSDS No. 655705001

Revision Date 12/13/2002

IMPORTANT: Read this MSDS before handling or disposing of this product and pass this information on to employees, customers and users of this product.

Emergency Overview

Physical State Semi-solid to solid (Smooth texture)
Color Blue. **Odor** Mild petroleum odor

WARNING:

If stored or applied via high-pressure grease gun, a potential skin injection hazard may exist.
Injection under the skin can cause severe injury.
Most damage occurs in the first few hours.
Initial symptoms may be minimal.
Hot grease will cause thermal burns upon contact.
This product can cause mild skin irritation and inflammation.
Spills may create a slipping hazard.

Hazard Rankings

| | HMIS | NFPA |
|---------------|------|------|
| Health Hazard | 1 | 0 |
| Fire Hazard | 1 | 1 |
| Reactivity | 0 | 0 |

* = Chronic Health Hazard

Protective Equipment

Minimum Recommended
See Section 8 for Details



SECTION 1: IDENTIFICATION

| | | | |
|-----------------------|--|--|----------------|
| Trade Name | CITGO Aquamarine® EP 2 Grease | Technical Contact | (800) 248-4684 |
| Product Number | 655705001 | Medical Emergency | (918) 495-4700 |
| CAS Number | Mixture. | CHEMTREC Emergency (United States Only) | (800) 424-9300 |
| Product Family | Lubricating grease | | |
| Synonyms | Lubricating grease; CITGO SAP Product Code No.: 655705001 | | |

SECTION 2: COMPOSITION

| Component Name(s) | CAS Registry No. | Concentration (%) |
|--------------------------------------|---------------------|-------------------|
| 1) White Mineral Oil | 8042-47-5 | 60 - 80 |
| 2) Proprietary Ingredients | Proprietary Mixture | 5 - 20 |
| 3) Aluminum Soap | 68647-58-5 | 1 - 15 |
| 4) 1-Propene, 2-methyl-, homopolymer | Proprietary | 1 - 10 |

SECTION 3: HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact.

Signs and Symptoms of Acute Exposure

CITGO Aquamarine® EP 2 Grease

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| Inhalation | No significant adverse health effects are expected to occur upon short-term exposure at ambient temperatures. If heated above its flash point, this product's vapors may cause respiratory tract irritation. Repeated or prolonged overexposure to product mists can result in respiratory tract inflammation and an increased risk of infection. |
| Eye Contact | This material can cause mild eye irritation from contact with product or product mists. |
| Skin Contact | This material can cause mild skin irritation from prolonged or repeated skin contact. Injection under the skin can cause inflammation and swelling. Injection of pressurized hydrocarbons can cause severe, permanent tissue damage. Initial symptoms may be minor. Injection of petroleum hydrocarbons requires immediate medical attention. Skin contact with hot material may result in severe burns. |
| Ingestion | This material can cause a laxative effect. If swallowed in large quantities, this material can obstruct the intestine. |
| Chronic Health Effects Summary | Contains a petroleum-based mineral oil. Prolonged or repeated skin contact can cause mild irritation and inflammation characterized by drying, cracking, (dermatitis) or oil acne. Repeated or prolonged inhalation of petroleum-based mineral oil mists at concentrations above applicable workplace exposure levels can cause respiratory irritation or other pulmonary effects. |
| Conditions Aggravated by Exposure | Medical conditions aggravated by exposure to this material may include pre-existing skin disorders. |
| Target Organs | This material may cause damage to the following organs: skin. |
| Carcinogenic Potential | This product does not contain any components at concentrations above 0.1% which are considered carcinogenic by OSHA, IARC or NTP. |

| OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200). | | | | | | | |
|---|---------------------------------------|---|---|---|--|--|--|
| OSHA Health Hazard Classification | | | | OSHA Physical Hazard Classification | | | |
| Irritant <input type="checkbox"/> | Toxic <input type="checkbox"/> | Combustible <input type="checkbox"/> | Explosive <input type="checkbox"/> | Pyrophoric <input type="checkbox"/> | | | |
| Sensitizer <input type="checkbox"/> | Highly Toxic <input type="checkbox"/> | Flammable <input type="checkbox"/> | Oxidizer <input type="checkbox"/> | Water-reactive <input type="checkbox"/> | | | |
| Corrosive <input type="checkbox"/> | Carcinogenic <input type="checkbox"/> | Compressed Gas <input type="checkbox"/> | Organic Peroxide <input type="checkbox"/> | Unstable <input type="checkbox"/> | | | |

SECTION 4: FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

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| Inhalation | Vaporization is not expected at ambient temperatures. This material is not expected to cause inhalation-related disorders under anticipated conditions of use. In case of overexposure, move the person to fresh air. |
| Eye Contact | Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water while occasionally lifting and lowering eyelids. Seek medical attention if excessive tearing, redness, or pain persists. |
| Skin Contact | If burned by hot material, cool skin by quenching with large amounts of cool water. For contact with product at ambient temperatures, remove contaminated shoes and clothing. Wipe off excess material. Wash exposed skin with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists. Thoroughly clean contaminated clothing before reuse. Discard contaminated leather goods. If material is injected under the skin, seek medical attention immediately. |
| Ingestion | Do not induce vomiting unless directed to by a physician. Rinse out mouth with water. Never give anything by mouth to a person who is not fully conscious. Allow small quantities to pass through the digestive system. If large amounts are swallowed or irritation or discomfort occurs, seek medical attention immediately. |
| Notes to Physician | In the event of injection in underlying tissue, immediate treatment should include extensive incision, debridement and saline irrigation. Inadequate treatment can result in ischemia and gangrene. Early symptoms may be minimal. |

SECTION 5: FIRE FIGHTING MEASURES

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| NFPA Flammability Classification | NFPA Class-IIIB combustible material. Slightly combustible! | | |
| Flash Point Method | OPEN CUP: >150°C (>302°F) (Estimated). | | |
| Lower Flammable Limit | No data. | Upper Flammable Limit | No data. |
| Autoignition Temperature | Not available. | | |
| Hazardous Combustion Products | Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and trace oxides of sulfur, aluminum, phosphorus and/or nitrogen. | | |
| Special Properties | Fight the fire from a safe distance in a protected location. Open any masses with a water stream to prevent reignition due to smoldering. Cool surface with water fog. Molten material can form flaming droplets if ignited. Water or foam can cause frothing. Use of water on product above 100° C (212° F) can cause product to expand with explosive force. Do not allow liquid runoff to enter sewers or public waters. | | |
| Extinguishing Media | Use dry chemical, foam, Carbon Dioxide or water fog. | | |
| Protection of Fire Fighters | Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. | | |

SECTION 6: ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Do not touch damaged containers or spilled material unless wearing appropriate protective equipment. Slipping hazard; do not walk through spilled material. Stop leak if you can do so without risk. For small spills, absorb or cover with dry earth, sand, or other inert non-combustible absorbent material and place into waste containers for later disposal. Contain large spills to maximize product recovery or disposal. Prevent entry into waterways or sewers. In urban area, cleanup spill as soon as possible. In natural environments, seek cleanup advice from specialists to minimize physical habitat damage. This material will float on water. Absorbent pads and similar materials can be used. Comply with all laws and regulation

SECTION 7: HANDLING AND STORAGE

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| Handling | If this product is stored or applied in high-pressure systems such as grease guns or hydraulic lines, there is the potential for accidental injection into the skin and underlying tissues. Hydrocarbons injected into skin or underlying tissues are not readily removed by body fluids and can cause pain, swelling, chemical irritation, infection and tissue destruction. Early symptoms may be minimal. Workers must be aware of the significant hazards associated with a hydrocarbon injection injury. In the event of an injection injury, workers should seek medical treatment immediately. Avoid water contamination and elevated temperatures to minimize product degradation. Empty containers may contain product residues that can ignite with explosive force. Do not pressurize, cut, weld, braze solder, drill, grind or expose containers to flames, sparks, heat or other potential ignition sources. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product. |
| Storage | Keep container closed. Do not store with strong oxidizing agents. Do not store at temperatures above 120° F or in direct sunlight for extended periods of time. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers or waste residues of this product. |

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Engineering Controls** Ventilation controls are not normally required under anticipated conditions of use. Provide exhaust ventilation or other engineering controls if airborne mists or vapors concentrations exceed recommended occupational exposure limits listed below. An eye wash station and safety shower should be located near the work-station.
- Personal Protective Equipment** Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.



- Eye Protection** Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Wear goggles and/or face shield if splashing or spraying is anticipated. Wear goggles and face shield if material is heated above 125°F (51°C). Have suitable eye wash water available.
- Hand Protection** Use gloves constructed of chemical resistant materials such as neoprene or heavy nitrile rubber if frequent or prolonged contact is expected. Use heat-protective gloves when handling product at elevated temperatures.
- Body Protection** Use clean and impervious protective clothing (e.g., neoprene or Tyvek®) if splashing or spraying conditions are present. Protective clothing may include long-sleeve outer garment, apron, or lab coat. If significant contact occurs, remove oil-contaminated clothing as soon as possible and promptly shower. Launder contaminated before reuse or discard. Wear heat protective boots and protective clothing when handling material at elevated temperatures.
- Respiratory Protection** Vaporization is not expected at ambient temperatures. Therefore, the need for respiratory protection is not anticipated under normal use conditions and with adequate ventilation. If elevated airborne concentrations above applicable workplace exposure levels are anticipated, a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter should be used. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).
- General Comments** Use good personal hygiene practices. Wash hands and other exposed skin areas with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities, or leaving work. DO NOT use gasoline, kerosene, solvents or harsh abrasives as skin cleaners. Since specific exposure standards/control limits have not been established for this product, the "Oil Mist, Mineral" exposure limits shown below are suggested as minimum control guidelines.

Occupational Exposure Guidelines

| Substance | Applicable Workplace Exposure Levels |
|----------------------|---|
| 1) Oil Mist, Mineral | ACGIH (United States). TWA: 5 mg/m ³ STEL: 10 mg/m ³ OSHA (United States). TWA: 5 mg/m ³ |

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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|----------------------------|---|---------------------------|-------------------------------|---------------------|
| Physical State | Semi-solid to solid (Smooth texture) | Color Blue. | Odor | Mild petroleum odor |
| Specific Gravity | <1 (Water = 1) | pH Not Applicable. | Vapor Density | >1 (Air = 1) |
| Boiling Point/Range | Not available. | | Melting/Freezing Point | Not available. |
| Vapor Pressure | <0.001 kPa (<0.01 mmHg) (at 20°C) | | Viscosity (cSt @ 40°C) | Not available |

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|------------------------------|---|---------------------------------|-----------------------|
| Solubility in Water | Insoluble in cold water. | Volatile Characteristics | Negligible volatility |
| Additional Properties | NLGI Grade: 2 Thickener: Aluminum Texture: Smooth | | |

SECTION 10: STABILITY AND REACTIVITY

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|---|--|---------------------------------|------------------------|
| Chemical Stability | Stable. | Hazardous Polymerization | Not expected to occur. |
| Conditions to Avoid | Keep away from extreme heat, sparks, open flame, and strongly oxidizing conditions. | | |
| Materials Incompatibility | Strong oxidizers. | | |
| Hazardous Decomposition Products | No additional hazardous decomposition products were identified other than the combustion identified in Section 5 of this MSDS. | | |

SECTION 11: TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 2 of this MSDS.

Toxicity Data

White Mineral Oil:

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|----------------|------------------------------|
| ORAL (LD50): | Acute: >5000 mg/kg [Rat]. |
| DERMAL (LD50): | Acute: >2000 mg/kg [Rabbit]. |

White Mineral Oil:

Low-viscosity and High-viscosity White Mineral Oils:

| | |
|-----------------------------|--|
| ORAL (LD50), Acute: | >5000 mg/kg [Rat]. |
| DERMAL (LD50), Acute: | >2000 mg/kg [Rabbit]. |
| DRAIZE EYE, Acute: | Non-irritating [Rabbit]. |
| DRAIZE DERMAL, Acute: | Non-irritating [Rabbit]. |
| BUEHLER, Acute: | Non-sensitizing [Guinea Pig]. |
| 28-Day DERMAL, Sub-Chronic: | Non-irritating [Rabbit]. |
| 104-Week DERMAL, Chronic: | No skin tumors at site of application [Mouse]. |

MUTAGENICITY:

| | |
|--------------------------|------------------------------------|
| Modified Ames Assay: | Negative [Salmonella typhimurium]. |
| in-vitro Lymphoma Assay: | Negative or no toxicity [Mouse]. |

Lifetime mouse skin painting studies indicated that white mineral oils are not mutagenic or carcinogenic. Mineral oil mists derived from highly refined oils are reported to have low acute and sub-acute toxicities in animals. Effects from single and short-term repeated exposures to high concentrations of mineral oil mists well above applicable workplace exposure levels include inflammatory reaction, lipoid granuloma formation and lipoid pneumonia. In acute and sub-acute studies involving exposures to lower concentrations of mineral oil mists at or near current workplace exposure levels produced no significant toxicological effects. In long term studies (up to two years) carcinogenic effects have been reported in any animal species tested.

Greases:

Injection of pressurized hydrocarbons under the skin, in muscle or into the blood stream can cause irritation, inflammation, swelling, fever, and systemic effects, including mild central nervous system depression. Injection of pressurized hydrocarbons can cause severe, permanent tissue damage.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Based on data from 96-hr acute toxicity tests, the median lethal concentration (LC₅₀) for this grease is estimated to be 47.7 WAF (water accommodated fraction) or 21,450 mg/L for saltwater mysids (*Mysidopsis bahia*).

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Environmental Fate


An environmental fate analysis has not been conducted on this specific product. Plants and animals may experience harmful or fatal effects when coated with petroleum-based products. Petroleum-based (mineral) lube oils will normally float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway can result in a loss of marine life or create an anaerobic environment. This material contains phosphorus which is a controlled element for disposal in effluent waters in most sections of North America. Phosphorus is known to enhance the formation of algae. Severe algae growth can reduce oxygen content in the water possibly below levels necessary to support marine life.

SECTION 13: DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Conditions of use may cause this material to become a "hazardous waste", as defined by federal or state regulations. It is the responsibility of the user to determine if the material is a RCRA "hazardous waste" at the time of disposal. Transportation, treatment, storage and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR 260 through 40 CFR 271). State and/or local regulations may be more restrictive. Contact the RCRA/Superfund Hotline at (800) 424-9346 or your regional US EPA office for guidance concerning case specific disposal issues.

SECTION 14: TRANSPORT INFORMATION

| | | | |
|----------------------|---|------------------------------|--|
| DOT Status | Not a U.S. Department of Transportation regulated material. | | |
| Proper Shipping Name | Not regulated. | | |
| Hazard Class | Not regulated. | Packing Group(s) | Not applicable. |
| | | UN/NA ID | Not regulated. |
| Reportable Quantity | A Reportable Quantity (RQ) has not been established for this material. | | |
| Placards |  | Emergency Response Guide No. | Not applicable. |
| | | HAZMAT STCC No. | Not assigned. |
| | | MARPOL III Status | Not a DOT "Marine Pollutant" per 49 CFR 171.8. |

SECTION 15: REGULATORY INFORMATION

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|----------------|--|
| TSCA Inventory | This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory. |
| SARA 302/304 | The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified. |
| SARA 311/312 | The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: No SARA 311/312 hazard categories identified. |
| SARA 313 | This product contains the following components in concentrations above de minimis levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: No components were identified. |