



CITGO AR Slushing Oil

Material Safety Data Sheet

CITGO Petroleum Corporation
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MSDS No. 639760001
Revision Date 7/19/2007

IMPORTANT: This MSDS is prepared in accordance with 29 CFR 1910.1200. Read this MSDS before transporting, handling, storing or disposing of this product and forward this information to employees, customers and users of this product.

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

* = Chronic Health Hazard

| Emergency Overview | |
|--|----------------------|
| Physical State | Liquid. |
| Color | Light amber to amber |
| Odor | Mild petroleum odor |
| WARNING! | |
| If liquid material is swallowed, contact a physician. | |
| Do not induce vomiting. | |
| If liquid material enters the lungs, it can cause severe damage. | |
| Mist or vapor can irritate the respiratory tract. | |
| Prolonged or repeated contact with used metalworking fluids can cause skin irritation. | |
| Spills may create a slipping hazard. | |

| Protective Equipment |
|---|
| Minimum Recommended See Section 8 for Details |
|    |

SECTION 1. PRODUCT IDENTIFICATION

| | | | |
|-----------------------|--|--|----------------|
| Trade Name | CITGO AR Slushing Oil | Technical Contact | (800) 248-4684 |
| Product Number | 639760001 | Medical Emergency | (832) 486-4700 |
| CAS Number | Mixture. | CHEMTREC Emergency (United States Only) | (800) 424-9300 |
| Product Family | Metalworking fluid | | |
| Synonyms | Metalworking fluid; CITGO® Material Code: 639760001 | | |

SECTION 2. COMPOSITION

| Component Name(s) | CAS Registry No. | Concentration (%) |
|--|---------------------|-------------------|
| Distillates, petroleum, solvent-refined light paraffinic | 64741-89-5 | 60 - 100 |
| Distillates, petroleum, solvent-refined heavy paraffinic | 64741-88-4 | 5 - 20 |
| Hydroxyalkyl carboxylic ester | Proprietary | <2 |
| Proprietary Ingredients | Proprietary Mixture | <1 |

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

| | |
|--------------------|---|
| Inhalation | Product mist can irritate the mucous membranes of the nose, the throat, bronchi, and lungs. |
| Eye Contact | This product can cause transient mild eye irritation with short-term contact with liquid sprays or mists. Symptoms include stinging, watering, redness, and swelling. |

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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.

Ingestion Ingestion can cause mild irritation to the digestive tract or cause a laxative effect. Because of the low viscosity of this material, this material can enter the lungs directly by aspiration (e.g., during swallowing or vomiting). If aspirated into the lungs, this material can cause severe lung damage or death.

Chronic Health Effects Summary Prolonged or repeated skin contact can cause irritation and inflammation characterized by drying, cracking, (dermatitis) or acne. In addition, incidents of allergic contact dermatitis have been reported from exposure to some used metalworking fluids. Repeated exposure to metal working fluid mists at concentrations above applicable workplace exposure levels have been associated with respiratory irritation or other pulmonary effects.

Conditions Aggravated by Exposure Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin, Respiratory System

Target Organs May cause damage to the following organs: upper respiratory tract, skin.

Carcinogenic Potential This product is not known to 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"/> | Sensitizer | <input type="checkbox"/> | Combustible | <input type="checkbox"/> | Explosive | <input type="checkbox"/> |
| Toxic | <input type="checkbox"/> | Highly Toxic | <input type="checkbox"/> | Flammable | <input type="checkbox"/> | Oxidizer | <input type="checkbox"/> |
| Corrosive | <input type="checkbox"/> | Carcinogenic | <input type="checkbox"/> | Compressed Gas | <input type="checkbox"/> | Organic Peroxide | <input type="checkbox"/> |
| | | | | | | Pyrophoric | <input type="checkbox"/> |
| | | | | | | Water-reactive | <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.

Inhalation Move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately. Keep the affected individual warm and at rest.

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. Clean or 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. Do not give anything to drink unless directed to by a physician. Never give anything by mouth to a person who is not fully conscious. If significant amounts are swallowed or irritation or discomfort occurs, seek medical attention immediately.

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Notes to Physician **INGESTION:** If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.

SECTION 5. FIRE FIGHTING MEASURES

NFPA Flammability Classification NFPA Class-IIIB combustible material.

Flash Point Closed cup: 180°C (356°F). (Pensky-Martens.) Open cup: 200°C (392°F) (Cleveland.).

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 and/or nitrogen.

Special Properties This material will release vapors when heated above the flash point temperature that can ignite when exposed to a source of ignition. In enclosed spaces, vapors can ignite with explosive force. Mists or sprays may burn at temperatures below the flash point.

Extinguishing Media Use dry chemical, foam, carbon dioxide or water fog. Water or foam may cause frothing. Carbon dioxide and inert gas can displace oxygen. Use caution when applying carbon dioxide or inert gas in confined spaces.

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 regulations.

SECTION 7. HANDLING AND STORAGE

Handling Carefully maintain metalworking fluid and associated equipment. Monitor metalworking fluid on a regular basis. Maintain product mist concentrations below applicable occupational exposure limits. Avoid contamination with tramp oil and other materials to minimize product degradation. Avoid exposing product to extreme temperatures. Replace used metalworking fluid if microbial growth is not manageable. Rancid or foul smelling used metalworking fluids may indicate uncontrolled microbial growth. Replace used metalworking fluid at the end of the useful service life. Carefully clean metalworking equipment and associated delivery systems prior to introducing new product.

Product container is not designed for elevated pressure. Do not pressurize, cut, weld, braze solder, drill, or grind on containers. Do not expose product containers to flames, sparks, heat or other potential ignition sources. Empty containers may contain product residues that can

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ignite with explosive force.

Storage Keep container closed. Store in a cool, dry, well-ventilated area. Do not store with strong oxidizing agents. Do not store at elevated temperatures. Avoid storing product 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 Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits (see 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 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 Avoid skin contact. Use gloves constructed of chemical resistant materials such as heavy nitrile rubber or appropriate barrier creams with prolonged or repeated contact. If the product is processed or handled at elevated temperature, protect against thermal burns by using heat-resistant (insulated) gloves. Do not wear gloves or loose fitting clothing around rotating or moving equipment. Use good personal hygiene practices.

Body Protection Use clean protective clothing 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 clothing before reuse or discard. Wear heat protective boots and protective clothing when handling material at elevated temperatures.

Respiratory Protection Use 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 |
|-----------|--------------------------------------|
|-----------|--------------------------------------|

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Oil Mist, Mineral

ACGIH (United States).

TWA: 5 mg/m³

STEL: 10 mg/m³

OSHA (United States).

TWA: 5 mg/m³

Metal Working Fluid

NIOSH (United States).

TWA: 0.4 mg/m³ Form: *Thoracic particulate mass

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)

| | | | | | |
|------------------------------|---|--------------|----------------------|-------------------------------|------------------------|
| Physical State | Liquid. | Color | Light amber to amber | Odor | Mild petroleum odor |
| Specific Gravity | 0.86 (Water = 1) | pH | Not applicable | Vapor Density | >1 (Air = 1) |
| Boiling Range | Not available. | | | Melting/Freezing Point | Not available. |
| Vapor Pressure | <0.01 kPa (<0.1 mm Hg) (at 20°C) | | | Volatility | Negligible volatility. |
| Solubility in Water | Negligible solubility in cold water. | | | Viscosity (cSt @ 40°C) | 18 |
| Flash Point | Closed cup: 180°C (356°F). (Pensky-Martens.) Open cup: 200°C (392°F) (Cleveland.). | | | | |
| Additional Properties | Gravity, °API (ASTM D287) = 32.3 @ 60° F Density = 7.19 Lbs/gal. Viscosity (ASTM D2161) = 95 SUS @ 100° F | | | | |

SECTION 10. STABILITY AND REACTIVITY

| | | | |
|---|---|---------------------------------|------------------------|
| 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 products 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 3 of this MSDS.

| | |
|----------------------|---|
| Toxicity Data | Distillates, petroleum, solvent-refined light paraffinic |
| | ORAL (LD50): Acute: >5000 mg/kg [Rat]. |
| | DERMAL (LD50): Acute: >2000 mg/kg [Rabbit]. |

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 lung 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 work place exposure levels produced no significant toxicological effects. In long term studies (up to two years) no carcinogenic effects have been reported in any animal species tested.

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

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Metalworking Fluid

Acute and chronic respiratory responses have been reported in occupational exposures to metal working fluids (MWF). In addition, exposure to MWF mists can aggravate existing respiratory conditions. Chronic effects of overexposure to MWF mists can include sinusitis, persistent cough, asthma, increased respiratory tract secretions and airway constriction.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Analysis for ecological effects has not been conducted on this product. However, if spilled, this product and any contaminated soil or water may be harmful to human, animal, and aquatic life. Also, the coating action associated with petroleum and petroleum products can be harmful or fatal to aquatic life and waterfowl.

Environmental Fate

An environmental fate analysis is not available for this specific product. Plants and animals may experience harmful or fatal effects when coated with petroleum products. Petroleum-based (mineral) lubricating oils normally will 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 may be sufficient to cause a fish kill or create an anaerobic environment.

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 "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 your regional US EPA office for guidance concerning case specific disposal issues. Empty drums and pails retain residue. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose this product's empty container to heat, flame, or other ignition sources. DO NOT attempt to clean it. Empty drums and pails should be drained completely, properly bunged or sealed, and promptly sent to a reconditioner.

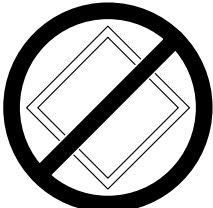
SECTION 14. TRANSPORT INFORMATION

The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.

US DOT Status Not regulated by the U.S. Department of Transportation as a hazardous material.

Proper Shipping Name Not regulated.

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| | | | |
|----------------------------|---|-------------------------------------|--|
| Hazard Class | Not regulated. | Packing Group | Not applicable. |
| | | UN/NA Number | Not regulated. |
| Reportable Quantity | A Reportable Quantity (RQ) has not been established for this material. | | |
| Placard(s) |  | Emergency Response Guide No. | Not applicable. |
| | | MARPOL III Status | Not a DOT "Marine Pollutant" per 49 CFR 171.8. |

SECTION 15. REGULATORY INFORMATION

| | |
|---|---|
| TSCA Inventory | This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory. |
| SARA 302/304 Emergency Planning and Notification | 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 Hazard Identification | 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 Toxic Chemical Notification and Release Reporting | This product contains the following components in concentrations above <i>de minimis</i> 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. |
| CERCLA | The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. This product or refinery stream is not known to contain chemical substances subject to this statute. However, it is recommended that you contact state and local authorities to determine if there are any other reporting requirements in the event of a spill. |
| Clean Water Act (CWA) | This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802. |
| California Proposition 65 | This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5): Toluene: <0.004% |
| New Jersey Right-to-Know Label | Petroleum Oil |

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Additional Remarks

Federal Hazardous Substances Act, related statutes, and Consumer Product Safety Commission regulations, as defined by 16 CFR 1500.14(b)(3) and 1500.83(a)(13): This product contains "Petroleum Distillates" which may require special labeling if distributed in a manner intended or packaged in a form suitable for use in the household or by children. Precautionary label dialogue should display the following: **DANGER: Contains Petroleum Distillates! Harmful or fatal if swallowed! Call Physician Immediately. KEEP OUT OF REACH OF CHILDREN!**

SECTION 16. OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number 2.0
Revision Date 7/19/2007

ABBREVIATIONS

| | | | | | | |
|--|-----------|-----------------|--------------|---|-------------|---------------------|
| AP: Approximately | EQ: Equal | >: Greater Than | <: Less Than | NA: Not Applicable | ND: No Data | NE: Not Established |
| ACGIH: American Conference of Governmental Industrial Hygienists | | | | AIHA: American Industrial Hygiene Association | | |
| IARC: International Agency for Research on Cancer | | | | NTP: National Toxicology Program | | |
| NIOSH: National Institute of Occupational Safety and Health | | | | OSHA: Occupational Safety and Health Administration | | |
| NPCA: National Paint and Coating Manufacturers Association | | | | HMIS: Hazardous Materials Information System | | |
| NFPA: National Fire Protection Association | | | | EPA: US Environmental Protection Agency | | |

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* * * * * END OF MSDS * * * * *