SAFETY DATA SHEET
CITGO Pacemaker® Oil, ISO 680

Section 1. Identification

<table>
<thead>
<tr>
<th>GHS product identifier</th>
<th>CITGO Pacemaker® Oil, ISO 680</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Lubricating Oil; Hydraulic Oil; CITGO SAP Product Code No.: 633014001</td>
</tr>
<tr>
<td>Code</td>
<td>633014001</td>
</tr>
<tr>
<td>MSDS #</td>
<td>633014001</td>
</tr>
</tbody>
</table>

Supplier's details

CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com

Emergency telephone number (with hours of operation)

Technical Contact: (800) 248-4684
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

OSHA/HCS status

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture

Not classified.

GHS label elements

Signal word

No signal word.

Hazard statements

No known significant effects or critical hazards.

Precautionary statements

Prevention

Not applicable.

Response

Not applicable.

Storage

Not applicable.

Disposal

Not applicable.

Hazards not otherwise classified

None known.

Section 3. Composition/information on ingredients

Substance/mixture

Mixture

Other means of identification

Lubricating Oil;
Hydraulic Oil;
CITGO SAP Product Code No.: 633014001

CAS number/other identifiers

CAS number

Not applicable.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual oils (petroleum,) solvent-refined</td>
<td>≥50 - ≤75</td>
<td>64742-01-4</td>
</tr>
<tr>
<td>Residual oils (petroleum), solvent deasphalted</td>
<td>≥25 - ≤50</td>
<td>64741-95-3</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Date of issue/Date of revision: 12/12/2018
Date of previous issue: 12/12/2018
Version: 5
Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

**Eye contact**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Inhalation**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

**Skin contact**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Ingestion**: Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

**Potential acute health effects**

| Eye contact | No known significant effects or critical hazards. |
| Ingestion | No known significant effects or critical hazards. |
| Skin contact | No known significant effects or critical hazards. |
| Ingestion | No known significant effects or critical hazards. |

**Over-exposure signs/symptoms**

| Eye contact | No specific data. |
| Ingestion | No specific data. |
| Skin contact | No specific data. |
| Ingestion | No specific data. |

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

**Notes to physician**

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**

Treat symptomatically and supportively.

**Protection of first-aiders**

No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

**Suitable extinguishing media**

Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**

None known.

Specific hazards arising from the chemical

**Decomposition products may include the following materials:**

- Carbon dioxide
- Carbon monoxide
Section 5. Fire-fighting measures

**Special protective actions for fire-fighters**

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.

**Special protective equipment for fire-fighters**

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

Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

**For emergency responders**

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**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 and materials for containment and cleaning up**

**Small spill**

Stop leak if without risk. Move containers from spill area. 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.

**Large spill**

Stop leak if without risk. Move containers from spill area. 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. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

**Precautions for safe handling**

**Protective measures**

Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene**

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities**

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. 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. See Section 10 for incompatible materials before handling or use.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.
Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Residual oils (petroleum,) solvent-refined

ACGIH TLV (United States, 3/2017).
TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction

NIOSH REL (United States, 10/2016).
TWA: 5 mg/m³ 10 hours. Form: Mist
STEL: 10 mg/m³ 15 minutes. Form: Mist

OSHA PEL (United States, 6/2016).
TWA: 5 mg/m³ 8 hours.

Residual oils (petroleum), solvent deasphalted

ACGIH TLV (United States, 3/2017).
TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction

NIOSH REL (United States, 10/2016).
TWA: 5 mg/m³ 10 hours. Form: Mist
STEL: 10 mg/m³ 15 minutes. Form: Mist

OSHA PEL (United States, 6/2016).
TWA: 5 mg/m³ 8 hours.

Appropriate engineering controls

Environmental exposure controls

: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

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. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection

: Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

: Avoid skin contact with liquid. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Leather boots are not protective for liquid contact.

Respiratory protection

: Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
## Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Dark amber to black</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild petroleum odor</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td></td>
</tr>
<tr>
<td>Closed cup: 270°C (518°F) [Pensky-Martens (ASTM D-93).] Open cup: 306°C (582.8°F) [Cleveland.]</td>
<td></td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>&lt;1 (n-butyl acetate. = 1)</td>
</tr>
<tr>
<td><strong>Lower and upper explosive (flammable) limits</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>&lt;0.0013 kPa (&lt;0.01 mm Hg) [room temperature]</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>&gt;1 [Air = 1]</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>0.91</td>
</tr>
<tr>
<td><strong>Density lbs/gal</strong></td>
<td>Estimated 7.59 lbs/gal</td>
</tr>
<tr>
<td><strong>Density gm/cm³</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Gravity, °API</strong></td>
<td>Estimated 24 @ 60 F</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Insoluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td><strong>Flow time (ISO 2431)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Kinematic (room temperature): 6.8 cm²/s (680 cSt)</td>
</tr>
</tbody>
</table>

## Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reactivity</strong></td>
<td>Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).</td>
</tr>
<tr>
<td><strong>Chemical stability</strong></td>
<td>The product is stable.</td>
</tr>
<tr>
<td><strong>Possibility of hazardous reactions</strong></td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td><strong>Conditions to avoid</strong></td>
<td>No specific data.</td>
</tr>
<tr>
<td><strong>Incompatible materials</strong></td>
<td>No specific data.</td>
</tr>
<tr>
<td><strong>Hazardous decomposition products</strong></td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
</tbody>
</table>

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual oils (petroleum,) solvent-refined</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**: Residual oils (petroleum,) solvent-refined: 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 lipid 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) no carcinogenic effects have been reported in any animal.
Section 11. Toxicological information

Irritation/Corrosion
Not available.

- **Skin**: No additional information.
- **Eyes**: No additional information.
- **Respiratory**: No additional information.

Sensitization
Not available.

- **Skin**: No additional information.
- **Respiratory**: No additional information.

Mutagenicity
Not available.

- **Conclusion/Summary**: No additional information.

Carcinogenicity
Not available.

- **Conclusion/Summary**: No additional information.

Reproductive toxicity
Not available.

- **Conclusion/Summary**: No additional information.

Teratogenicity
Not available.

- **Conclusion/Summary**: No additional information.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure
Routes of entry anticipated: Dermal.

Potential acute health effects

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: No known significant effects or critical hazards.
- **Skin contact**: No known significant effects or critical hazards.
- **Ingestion**: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- **Eye contact**: No specific data.
- **Inhalation**: No specific data.
- **Skin contact**: No specific data.
- **Ingestion**: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

**Short term exposure**
Section 11. Toxicological information

- Potential immediate effects: Not available.
- Potential delayed effects: Not available.
- Long term exposure
  - Potential immediate effects: Not available.
  - Potential delayed effects: Not available.

Potential chronic health effects
Not available.

General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity
Not available.

Conclusion/Summary: Not available.

Persistence and degradability

Conclusion/Summary: Not available.

Bioaccumulative potential
Not available.

Mobility in soil

Soil/water partition coefficient (Koc): Not available.

Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: 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. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

Special precautions for user: Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not available.

Section 15. Regulatory information

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

Clean Water Act (CWA) 307: naphthalene; toluene
Clean Water Act (CWA) 311: aniline; naphthalene; toluene

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.

SARA 302/304
Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>EHS</th>
<th>SARA 302 TPQ (lbs)</th>
<th>(gallons)</th>
<th>SARA 304 RQ (lbs)</th>
<th>(gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>aniline</td>
<td>&lt;0.001</td>
<td>Yes.</td>
<td>1000</td>
<td>117.6</td>
<td>5000</td>
<td>587.9</td>
</tr>
</tbody>
</table>

SARA 304 RQ: 4504504504.5 lbs / 2045045045 kg [593674446.1 gal / 2247302247.3 L]

SARA 311/312
Classification: Not applicable.
Composition/information on ingredients: No products were found.

State regulations
Massachusetts: None of the components are listed.
New York: None of the components are listed.
New Jersey: None of the components are listed.
Pennsylvania: The following components are listed: Deashpalted Residuum

California Prop. 65 Clear and Reasonable Warnings (2018)

Date of issue/Date of revision: 12/12/2018  Date of previous issue: 12/12/2018  Version: 5
Section 15. Regulatory information

**WARNING:** This product can expose you to chemicals including 2-Naphthylamine, Naphthalene, Aniline, Ethyl acrylate, which are known to the State of California to cause cancer, and Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

**International regulations**

**Inventory list**

- **United States**: All components are listed or exempted.
- **Australia**: All components are listed or exempted.
- **Canada**: All components are listed or exempted.
- **China**: All components are listed or exempted.
- **Europe**: All components are listed or exempted.
- **Japan**: 
  - **Japan inventory (ENCS)**: Not determined.
  - **Japan inventory (ISHL)**: Not determined.
- **Malaysia**: Not determined.
- **New Zealand**: All components are listed or exempted.
- **Philippines**: All components are listed or exempted.
- **Republic of Korea**: All components are listed or exempted.
- **Taiwan**: All components are listed or exempted.
- **Thailand**: Not determined.
- **Turkey**: Not determined.
- **Viet Nam**: Not determined.

Section 16. Other information

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

![Flammability](5)
![Health](0)
![Instability/Reactivity](0)
![Special](0)

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**Procedure used to derive the classification**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified.</td>
<td></td>
</tr>
</tbody>
</table>

**History**

- **Date of printing**: 12/12/2018
- **Date of issue/Date of revision**: 12/12/2018
- **Date of previous issue**: 12/12/2018
- **Version**: 5
Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
                     BCF = Bioconcentration Factor
                     GHS = Globally Harmonized System of Classification and Labelling of Chemicals
                     IATA = International Air Transport Association
                     IBC = Intermediate Bulk Container
                     IMDG = International Maritime Dangerous Goods
                     LogPow = logarithm of the octanol/water partition coefficient
                     UN = United Nations

References : Not available.

Notice to reader

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Date of issue/Date of revision : 12/12/2018       Date of previous issue : 12/12/2018       Version : 5