SAFETY DATA SHEET
CITGO Pacemaker® HV-39 Oil

Section 1. Identification

<table>
<thead>
<tr>
<th>GHS product identifier</th>
<th>CITGO Pacemaker® HV-39 Oil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Industrial oil</td>
</tr>
<tr>
<td>Code</td>
<td>634104001</td>
</tr>
<tr>
<td>MSDS #</td>
<td>634104001</td>
</tr>
</tbody>
</table>

Supplier's details

<table>
<thead>
<tr>
<th>CITGO Petroleum Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.O. Box 4689</td>
</tr>
<tr>
<td>Houston, TX 77210</td>
</tr>
<tr>
<td><a href="mailto:sdsvend@citgo.com">sdsvend@citgo.com</a></td>
</tr>
</tbody>
</table>

Emergency telephone number (with hours of operation)

<table>
<thead>
<tr>
<th>Technical Contact: (800) 248-4684</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Emergency: (832) 486-4700</td>
</tr>
<tr>
<td>CHEMTREC Emergency: (800) 424-9300</td>
</tr>
<tr>
<td>(United States Only)</td>
</tr>
</tbody>
</table>

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

General

| Avoid contact with eyes, skin and clothing. May be harmful if swallowed. IF IN EYES: Rinse cautiously with water for several minutes. IF SWALLOWED: Do NOT induce vomiting. After handling, always wash hands thoroughly with soap and water. If you feel unwell, seek medical attention and show the label when possible. Keep out of reach of children. |

Prevention

| Not applicable. |

Response

| Not applicable. |

Storage

| Store in a dry place and/or in closed container. Store in accordance with all local, regional, national and international regulations. |

Disposal

| Dispose of contents and container in accordance with all local, regional, national and international regulations. |

Hazard not otherwise classified

| None known. |

Section 3. Composition/information on ingredients

Substance/mixture

| Substance |

Other means of identification

| Industrial oil |

CAS number/other identifiers

| CAS number |
| Not available. |
Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated heavy paraffinic</td>
<td>&gt;99</td>
<td>64742-54-7</td>
</tr>
</tbody>
</table>

*_ = Various ** = Mixture *** = Proprietary_

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

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.
- **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.

**Over-exposure signs/symptoms**

- **Eye contact**: No specific data.
- **Inhalation**: 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**: In a fire or if heated, a pressure increase will occur and the container may burst.
Section 5. Fire-fighting measures

| Hazardous thermal decomposition products | : No specific data. |
| 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

Distillates (petroleum), hydrotreated heavy paraffinic

ACGIH TLV (United States, 3/2016).
TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction
OSHA PEL (United States, 6/2016).
TWA: 5 mg/m³ 8 hours.
NIOSH REL (United States, 10/2013).
TWA: 5 mg/m³ 10 hours. Form: Mist
STEL: 10 mg/m³ 15 minutes. Form: Mist

Appropriate engineering controls

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

Environmental exposure controls

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.

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.

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

Appearance

Physical state

Liquid.

Color

Light amber

Odor

Mild petroleum odor

pH

Not available.

Boiling point

Not available.

Flash point

Closed cup: 216°C (420.8°F) [Pensky-Martens (ASTM D-93)]
Open cup: 230°C (446°F) [Cleveland.]

Date of issue/Date of revision : 5/31/2018   Date of previous issue : No previous validation   Version : 1
**Section 9. Physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporation rate</td>
<td>&lt;1 (n-butyl acetate. = 1)</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt;0.0013 kPa (&lt;0.01 mm Hg) [room temperature]</td>
</tr>
<tr>
<td>Vapor density</td>
<td>&gt;1 [Air = 1]</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.87</td>
</tr>
<tr>
<td>Density lbs/gal</td>
<td>Estimated 7.25 lbs/gal</td>
</tr>
<tr>
<td>Density gm/cm³</td>
<td>Not available.</td>
</tr>
<tr>
<td>Gravity, °API</td>
<td>Estimated 31 @ 60 F</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in the following materials: cold water.</td>
</tr>
<tr>
<td>Flow time (ISO 2431)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Estimated 210 SUS @104 F</td>
</tr>
</tbody>
</table>

**Section 10. Stability and reactivity**

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

<table>
<thead>
<tr>
<th>Acute toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated heavy paraffinic</td>
</tr>
</tbody>
</table>

**Conclusion/Summary**

Distillates (petroleum), hydrotreated heavy paraffinic: 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, lipid 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.

**Irritation/Corrosion**

Not available.

<table>
<thead>
<tr>
<th>Skin</th>
<th>No additional information.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>No additional information.</td>
</tr>
<tr>
<td>Respiratory</td>
<td>No additional information.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

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
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.
Section 11. Toxicological information

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 (K_{OC}): 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>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 5/31/2018
Date of previous issue: No previous validation
Version: 1
Section 14. Transport information

Environmental hazards

No. No. No.

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.

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
SARA 304 RQ: Not applicable.

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: None of the components are listed.

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): All components are listed or exempted.

Japan inventory (ISHL): Not determined.

Malaysia: All components are listed or exempted.

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: All components are listed or exempted.

Viet Nam: Not determined.
Section 16. Other information

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

Flammability

Health

Instability/Reactivity

Special

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

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       | 5/31/2018 |
| Date of issue/Date of revision | 5/31/2018 |
| Date of previous issue | No previous validation |
| Version             | 1          |

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.

 Indicates information that has changed from previously issued version.

Notice to reader

THE INFORMATION IN THIS SAFETY DATA SHEET (SDS) WAS OBTAINED FROM SOURCES WHICH WE BELIEVE ARE RELIABLE. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED REGARDING ITS CORRECTNESS OR ACCURACY. SOME INFORMATION PRESENTED AND CONCLUSIONS DRAWN HEREIN ARE FROM SOURCES OTHER THAN DIRECT TEST DATA ON THE SUBSTANCE ITSELF. THIS SDS WAS PREPARED AND IS TO BE USED ONLY FOR THIS PRODUCT. IF THE PRODUCT IS USED AS A COMPONENT IN ANOTHER PRODUCT, THIS SDS INFORMATION MAY NOT BE APPLICABLE. USERS SHOULD MAKE THEIR OWN INVESTIGATIONS TO DETERMINE THE SUITABILITY OF THE INFORMATION OR PRODUCTS FOR THEIR PARTICULAR PURPOSE OR APPLICATION.

THE CONDITIONS OR METHODS OF HANDLING, STORAGE, USE, AND/OR DISPOSAL OF THE PRODUCT ARE BEYOND OUR CONTROL AND MAY BE BEYOND OUR KNOWLEDGE. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR ANY LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.

CITGO is a registered trademark of CITGO Petroleum Corporation