Material Name: STARFIRE Premium Plus 15W-40 CJ-4

*** Section 1 - Identification ***

Product Identifier

STARFIRE Premium Plus 15W-40 CJ-4 Motor Oil

Product Code

641

Synonyms

Petroleum oil; Lube oil; Petroleum hydrocarbon; Lubricant.

Recommended Use

For lubricating diesel engines. If this product is used in combination with other products, refer to the Safety Data Sheet for those products.

Restrictions on Use

None known.

Manufacturer Information

PennStar

6 Horwith Dr.

Northampton, PA 18067

Phone: 1-484-275-7990

www.pennstar.com

Issue Date

March 30, 2015

Supersedes Issue Date

June 3, 2014

Original Issue Date

June 15, 1989

*** Section 2 - Hazard(s) Identification ***


Not hazardous according to classification criteria.

GHS LABEL ELEMENTS

Symbol(s)

None needed according to classification criteria.

Signal Word

None needed according to classification criteria.

Hazard Statement(s)

None needed according to classification criteria.

Precautionary Statement(s)

Prevention

None needed according to classification criteria.

Response

None needed according to classification criteria.

Storage

None needed according to classification criteria.

Disposal

Dispose in accordance with all applicable regulations.

Hazard(s) Not Otherwise Classified

Repeated exposure may cause skin dryness or cracking.
**Section 3 - Composition / Information on Ingredients**

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>64742-58-1</td>
<td>Lubricating oils, petroleum, hydrotreated spent</td>
<td>35-85</td>
</tr>
<tr>
<td>72623-83-7</td>
<td>Lubricating oils (petroleum), C&gt;25, hydrotreated bright stock</td>
<td>0.1-55</td>
</tr>
<tr>
<td>64742-62-7</td>
<td>Residual oils (petroleum), solvent dewaxed</td>
<td>0.1-55</td>
</tr>
<tr>
<td>64742-57-0</td>
<td>Residual Oils (petroleum), hydrotreated</td>
<td>0.1-55</td>
</tr>
<tr>
<td>64742-01-4</td>
<td>Residual oils (petroleum), solvent refined</td>
<td>0-46</td>
</tr>
<tr>
<td>Not Available</td>
<td>Mineral Oil*</td>
<td>0.1-37.5</td>
</tr>
<tr>
<td>Not Available</td>
<td>Proprietary additives*</td>
<td>10-30</td>
</tr>
<tr>
<td>64741-88-4</td>
<td>Petroleum distillates, solvent-refined heavy paraffinic</td>
<td>1-15</td>
</tr>
<tr>
<td>122-39-4</td>
<td>Diphenylamine</td>
<td>1-15</td>
</tr>
<tr>
<td>72623-86-0</td>
<td>Lubricating oils, petroleum, C15-30, hydrotreated neutral oil-based</td>
<td>0.1-11</td>
</tr>
<tr>
<td>---</td>
<td>Mixture**</td>
<td>0-5</td>
</tr>
</tbody>
</table>

Component Related Regulatory Information

*Supplier and/or Coolants Plus advises that this is a trade secret.


**Section 4 - First Aid Measures**

**Description of Necessary Measures**

**Inhalation**
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention, if needed.

**Skin**
IF ON SKIN: Wash with plenty of soap and water. Get medical attention, if needed.

**Eyes**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if needed.

**Ingestion**
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

**Most Important Symptoms/Effects**

**Acute**
No information on significant adverse effects.

**Delayed**
No information on significant adverse effects.

**Indication of Immediate Medical Attention and Special Treatment Needed, If Needed**
Treat symptomatically and supportively. Call 1-800-428-1760 for additional information.

**Section 5 - Fire-Fighting Measures**

**Suitable Extinguishing Media**
Carbon dioxide, regular foam, dry chemical, water spray, or water fog.

**Unsuitable Extinguishing Media**
Do not use high pressure water streams.

**Specific Hazards Arising from the Chemical**
Negligible fire hazard. Avoid friction, static electricity, and sparks.

**Hazardous Combustion Products**
Decomposition and combustion materials may be toxic. Burning may produce smoke, carbon dioxide, carbon monoxide, unidentified organic compounds, metal oxides, nitrogen oxides, hydrogen sulfide, sulfur oxides, oxides of phosphorus, and oxides of zinc.
Safety Data Sheet

Material Name: STARFIRE Premium Plus 15W-40 CJ-4

Special Protective Equipment and Precautions for Firefighters

A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Keep unnecessary people away, isolate hazard area and deny entry.

NFPA Ratings: Health: 1 Fire: 1 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

Methods and Materials for Containment and Clean Up

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in Section 8: Exposure Controls/Personal Protection. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal. Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

*** Section 7 - Handling and Storage ***

Precautions for Safe Handling

Keep away from sparks and flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean tools and explosion proof equipment. When transferring large volumes of products, metal containers, including trucks and tank cars, should be grounded and bonded. This product has a low vapor pressure and is not expected to present an inhalation hazard under normal temperatures and pressures. However, when aerosolizing, misting, or heating this product, do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes.

Conditions for Safe Storage, Including Any Incompatibilities

Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous.

Incompatibilities

Oxidizing materials, acids.

*** Section 8 - Exposure Controls / Personal Protection ***

Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

Appropriate Engineering Controls

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits.

Individual Protective Measures, such as 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 regulatory requirements. The following PPE should be considered the minimum required: safety glasses, gloves, lab coat, or apron.

Eyes/Face Protection

Safety glasses with side shields should be worn at a minimum. Additional protection such as goggles, face shields, or respirators may be needed depending upon anticipated use and concentrations of mists or vapors. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. Contact lens use is not recommended.
**Safety Data Sheet**

**Material Name: STARFIRE Premium Plus 15W-40 CJ-4**

**Skin Protection**

Where skin contact is likely, wear gloves impervious to product; use of natural rubber (latex) or equivalent gloves is not recommended. When product is heated and skin contact is likely, wear heat-resistant gloves, boots, and other protective clothing.

**Respiratory Protection**

No respirator is required under normal conditions of use. Use NIOSH-certified P- or R-series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Protection provided by air purifying respirators is limited. Do not use N-rated respirators. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

<table>
<thead>
<tr>
<th><strong>Section 9 - Physical &amp; Chemical Properties</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance/Odor:</strong> Amber liquid, petroleum odor</td>
</tr>
<tr>
<td><strong>Odor Threshold:</strong> Not available</td>
</tr>
<tr>
<td><strong>Melting Point:</strong> Not available</td>
</tr>
<tr>
<td><strong>Specific Gravity:</strong> 0.88 (water = 1)</td>
</tr>
<tr>
<td>(approximately)</td>
</tr>
<tr>
<td><strong>Octanol/H2O Coeff.:</strong> Not available.</td>
</tr>
<tr>
<td><strong>Molecular Weight:</strong> Not available.</td>
</tr>
<tr>
<td><strong>LFL:</strong> Not available</td>
</tr>
<tr>
<td><strong>UFL:</strong> Not available</td>
</tr>
<tr>
<td><strong>Vapor Pressure:</strong> Less than 0.1 mm Hg at 68°F (20°C)</td>
</tr>
</tbody>
</table>

**Other Property Information**

No information is available.

<table>
<thead>
<tr>
<th><strong>Section 10 - Stability &amp; Reactivity</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reactivity</strong></td>
</tr>
<tr>
<td><strong>Chemical Stability</strong></td>
</tr>
<tr>
<td><strong>Possibility of Hazardous Reactions</strong></td>
</tr>
<tr>
<td><strong>Conditions To Avoid</strong></td>
</tr>
<tr>
<td><strong>Incompatible Materials</strong></td>
</tr>
<tr>
<td><strong>Hazardous Decomposition Products</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Section 11 - Toxicological Information</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Toxicity Data and Information</strong></td>
</tr>
<tr>
<td><strong>Component Analysis - LD50/LC50</strong></td>
</tr>
<tr>
<td>Lubricating oils, petroleum, hydrotreated spent (64742-58-1)</td>
</tr>
<tr>
<td>Residual oils (petroleum), solvent refined (64742-01-4)</td>
</tr>
<tr>
<td>Residual oils (petroleum), solvent dewaxed (64742-62-7)</td>
</tr>
<tr>
<td>Lubricating oils (petroleum), C&gt;25, hydrotreated bright stock (72623-83-7)</td>
</tr>
</tbody>
</table>
Material Name: STARFIRE Premium Plus 15W-40 CJ-4

<table>
<thead>
<tr>
<th>Lubricating oils, petroleum, C15-30, hydrotreated neutral oil-based (72623-86-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation LC50 Rat 2.18 mg/L 4 h; Oral LD50 Rat &gt;5000 mg/kg; Dermal LD50 Rabbit &gt;2000 mg/kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Petroleum distillates, solvent-refined heavy paraffinic (64741-88-4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation LC50 Rat 2.18 mg/L 4 h; Oral LD50 Rat &gt;5000 mg/kg; Dermal LD50 Rabbit &gt;2000 mg/kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration/Test/Species</td>
</tr>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
</tr>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
</tr>
</tbody>
</table>

Information on Likely Routes of Exposure

**Inhalation**
No information on significant adverse effects.

**Ingestion**
May be harmful if swallowed.

**Skin Contact**
Prolonged or repeated skin contact may cause irritation.

**Eye Contact**
No information on significant adverse effects.

**Immediate Effects**
No information on significant adverse effects.

**Delayed Effects**
No information on significant adverse effects.

**Irritation/Corrosivity**
May cause slight skin and respiratory irritation.

**Respiratory Sensitization**
No information available for the product.

**Skin Sensitization**
No information available for the product.

**Carcinogenicity**

**Component Carcinogenicity**
None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

**Germ Cell Mutagenicity**
No information available for the product.

**Teratogenicity**
No information available for the product.

**Reproductive Effects**
No epidemiological data is available for this product.

**Specific Target Organ Effects - Single Exposure**
No information on significant adverse effects.

**Specific Target Organ Effects - Repeated Exposure**
No information on significant adverse effects.

**Aspiration Hazard**
No data available.

**Medical Conditions Aggravated by Exposure**
Individuals with pre-existing respiratory tract (nose, throat, and lungs), central nervous system, kidney, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

---

**Section 12 - Ecological Information**

**Ecotoxicity**
Harmful to aquatic life. Avoid release to the environment.
Safety Data Sheet

Material Name: STARFIRE Premium Plus 15W-40 CJ-4

Component Analysis - Ecotoxicity - Aquatic Toxicity

**Lubricating oils, petroleum, hydrotreated spent (64742-58-1)**

<table>
<thead>
<tr>
<th>Duration/Test/Species</th>
<th>Concentration/Conditions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50 Brachydanio rerio</td>
<td>79.6 mg/L [semi-static]</td>
<td></td>
</tr>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>3.2 mg/L [semi-static]</td>
<td></td>
</tr>
</tbody>
</table>

**Residual oils (petroleum), solvent refined (64742-01-4)**

<table>
<thead>
<tr>
<th>Duration/Test/Species</th>
<th>Concentration/Conditions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50 Oncorhynchus mykiss</td>
<td>&gt;5000 mg/L</td>
<td></td>
</tr>
<tr>
<td>48 Hr EC50 Daphnia magna</td>
<td>&gt;1000 mg/L</td>
<td></td>
</tr>
</tbody>
</table>

**Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3)**

<table>
<thead>
<tr>
<th>Duration/Test/Species</th>
<th>Concentration/Conditions</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>1.0 - 5.0 mg/L [static]</td>
<td></td>
</tr>
<tr>
<td>96 Hr LC50 Pimephales promelas</td>
<td>10.0 - 35.0 mg/L [semi-static]</td>
<td></td>
</tr>
<tr>
<td>48 Hr EC50 Daphnia magna</td>
<td>1 - 1.5 mg/L</td>
<td></td>
</tr>
</tbody>
</table>

Persistence and Degradability
No information available for the product.

Bioaccumulation Potential
No information available for the product.

Mobility in Soil
No information available for the product.

Other Adverse Effects
No additional information is available.

** *** Section 13 - Disposal Considerations *** **

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Coolants Plus regarding proper recycling or disposal. This product, if discarded, is not expected to be a characteristic or listed hazardous waste. If recycled in the USA, this product can be managed in accordance with the used oil exemption under 40 CFR Part 279. Processing, use, or contamination by the user may change the waste code(s) applicable to the disposal of this product.

** *** Section 14 - Transport Information *** **

Emergency Response Guide Number
Not applicable.

DOT Shipping Name: Not regulated as a hazardous material for transportation.

TDG Shipping Name: Not regulated as a dangerous good for transportation.

** *** Section 15 - Regulatory Information *** **

Volatile Organic Compounds (As Regulated)
Negligible; As per 40 CFR Part 51.100(s)

Federal Regulations
SARA 302/304

Component Analysis
Based on the ingredient(s) listed in SECTION 3, this product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

SARA 311/312 Hazardous Categories
Acute Health: No Chronic Health: No Fire: No Pressure: No Reactive: No

SARA Section 313
Component Analysis
This product contains a "toxic" chemical subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

**Zinc alkyl dithiophosphate (Not Available)**

1.0 % de minimis concentration (related to Zinc compounds)
Safety Data Sheet

Material Name: STARFIRE Premium Plus 15W-40 CJ-4

Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts (68649-42-3) 1.0 % de minimis concentration (related to Zinc compounds)

CERCLA
Component Analysis
Based on the ingredient(s) listed in SECTION 3, this product does not contain any "hazardous substance" listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4.

TSCA Inventory
All the components of this product are listed on, or are automatically included as "naturally occurring chemical substances" on, or are exempted from the requirement to be listed on, the TSCA Inventory.

Component Analysis

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricating oils, petroleum, hydrotreated spent</td>
<td>64742-58-1</td>
<td>Yes</td>
</tr>
<tr>
<td>Residual oils (petroleum), solvent refined</td>
<td>64742-01-4</td>
<td>Yes</td>
</tr>
<tr>
<td>Residual oils (petroleum), solvent dewaxed</td>
<td>64742-62-7</td>
<td>Yes</td>
</tr>
<tr>
<td>Lubricating oils (petroleum), C-25, hydrotreated bright stock</td>
<td>72623-83-7</td>
<td>Yes</td>
</tr>
<tr>
<td>Lubricating oils, petroleum, C15-30, hydrotreated neutral oil-based</td>
<td>72623-86-0</td>
<td>Yes</td>
</tr>
<tr>
<td>Petroleum distillates, solvent-refined heavy paraffinic</td>
<td>64741-88-4</td>
<td>Yes</td>
</tr>
<tr>
<td>N-Phenylbenzenamine, reaction products with 2,4,4-trimethylpentene</td>
<td>68411-46-1</td>
<td>Yes</td>
</tr>
<tr>
<td>Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts</td>
<td>68649-42-3</td>
<td>Yes</td>
</tr>
</tbody>
</table>

U.S. State Regulations
None of this product’s components are listed on the state lists from CA, MA, MN, NJ, or PA.
No component(s) are listed under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

Canadian Regulations
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

Component Analysis

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>CAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricating oils, petroleum, hydrotreated spent</td>
<td>64742-58-1</td>
<td>DSL</td>
</tr>
<tr>
<td>Residual oils (petroleum), solvent refined</td>
<td>64742-01-4</td>
<td>DSL</td>
</tr>
<tr>
<td>Gas oils, petroleum, vacuum, hydrocracked, hydroisomerized, hydrogenated, C20-40, branched and cyclic, high viscosity index</td>
<td>178603-65-1</td>
<td>DSL</td>
</tr>
<tr>
<td>Gas oils, petroleum, vacuum, hydrocracked, hydroisomerized, hydrogenated, C25-55, branched and cyclic, high viscosity index</td>
<td>178603-66-2</td>
<td>DSL</td>
</tr>
<tr>
<td>Gas oils, petroleum, vacuum, hydrocracked, hydroisomerized, hydrogenated, C15-30, branched and cyclic, high viscosity index</td>
<td>178603-64-0</td>
<td>DSL</td>
</tr>
<tr>
<td>Benzenesulfonic acid, mono-C16-24-alkyl derivatives, calcium salts, overbased</td>
<td>70024-71-4</td>
<td>DSL</td>
</tr>
<tr>
<td>Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts</td>
<td>68649-42-3</td>
<td>DSL</td>
</tr>
</tbody>
</table>

Canadian WHMIS Information
Not regulated.

Component Analysis – WHMIS IDL
Not regulated.

*** Section 16 - Other Information ***

Revision Information
Safety Data Sheet

Material Name: STARFIRE Premium Plus 15W-40 CJ-4

Key/Legend
ACGIH - American Conference of Governmental Industrial Hygienists; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

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