Engine builders have grown increasingly concerned that many modern motor oils do not provide adequate wear protection for new engines, particularly those using flat-tappet cams. Royal Purple has addressed this issue by developing a new engine break-in oil.

Royal Purple Break-in Oil is formulated to allow optimal ring seal and protect rotating assembly components such as the camshaft and valve train from initial start up wear. Royal Purple combines highly refined mineral oil, preferred for engine break-in, with advanced additives containing high levels of zinc and phosphorus to optimize protection in flat-tappet and roller engines.

Royal Purple Break-in Oil is fully formulated and does not require the use of any other chemical additives. Royal Purple recommends using their high performance motor oils after the engine is broken in for maximum engine performance. Royal Purple Break-in Oil is available in quart and case quantities.

**TYPICAL PROPERTIES***

<table>
<thead>
<tr>
<th>ASTM TESTS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>D-445</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cSt @ 40°C</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>cSt @ 100°C</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>SUS @ 100°F</td>
<td>360</td>
<td></td>
</tr>
<tr>
<td>SUS @ 210°F</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>D-2279</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity Index</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>D-4684</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pumping Viscosity</td>
<td></td>
<td>18,200</td>
</tr>
<tr>
<td>cP @ -30°F</td>
<td>18,200</td>
<td></td>
</tr>
<tr>
<td>D-92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash °F</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Fire °F</td>
<td>440</td>
<td></td>
</tr>
</tbody>
</table>
I. Product Name: Royal Purple® Break-In Oil
   Chemical Family: Lubricating oil
   Use: Lubricant and corrosion inhibitor

II. Components:

   • Base Oil (highly refined mineral oil) — Synthetic additives with iso-paraffinic diluents.
   • The precise composition of this oil is proprietary. A more complete disclosure will be provided to a physician or nurse in the event of a medical emergency.
   • All components of this product are listed on the U.S. TSCA inventory.
   • This product contains no hazardous substances within the definition of OSHA Regulation 29 CFR 1910.1200.
   • Royal Purple certifies that this product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form.

III. Main Hazards / Health Effects:

   Eyes: May cause irritation.
   Inhalation: Oil mist may line breathing passages with oil making breathing difficult.
   Ingestion: May cause diarrhea.
   Skin: May irritate the skin after prolonged periods of contact.

IV. First Aid:

   Eyes: Flush with water until all residual material is gone. If irritation persists, seek medical help.
   Inhalation: Clear air passage. If respiratory difficulty continues, seek medical help.
   Ingestion: Wash out mouth immediately. Do not induce vomiting. Consult physician.
   Skin: Wash thoroughly with hand cleanser, followed by soap and water. Contaminated clothing should be dry cleaned before reuse.

V. Extinguishing Media:

   Suitable: Foam, dry powder, Halon®, carbon dioxide, sand, earth and water mist.
   Unsuitable: Water jet.
   Protective Equipment for Fire Fighting: Self-contained breathing apparatus.

VI. Accidental Release Measures:

   Personal Precautions: Wear gloves and protective overalls.
   Environmental Precautions: Do not allow it to enter drains.
   Spillage: Contain spill and keep from entering waterways. Absorb on porous material. Large quantities can be pumped.

VII. Handling and Storage:

   Handling: No special handling precautions necessary.
   Storage: Do not store at elevated temperatures.

VIII. Exposure Control / Personal Protection:

   Respiratory Protection: Hydrocarbon absorbing respirator if misting.
   Hand Protection: Oil-proof gloves for hypersensitive persons.
   Eye Protection: Glasses, if applied to parts in motion.
   Body Protection: Overalls.

IX. Physical and Chemical Properties:

   Physical State: Liquid
   Color: Purple
   Odor: Lube Oil
   pH: Neutral
   Boiling Range / Point °F (°C): >420 (>218)
   Pour Point °F (°C): < 0 (<-18)
   Flash Point (COC) °F (°C): 400 (204)
   Autoignition Temperature °F (°C): >600 (>315)
   Evaporation Rate (Butyl Acetate = 1): Negligible
   Vapor Pressure (kPa): <0.1
   Percent Volatiles: None
   Density (g/cm³): 0.87
   Flammability: Not flammable at ambient temp.
   OAR Value: UN
   Oxidizing Properties: None
   Water Solubility: Emulsifiable
   Vapor Density: Greater than air
**Product Name:** Royal Purple® Break-In Oil

**Stability and Reactivity:**
- **Stability:** Chemically stable under normal conditions. No photoreactive agents.
- **Conditions to Avoid:** Powerful sources of ignition and extreme temperatures.
- **Materials to Avoid:** Strong inorganic and organic acids, oxidizing agents.
- **Hazardous Decomposition Products:** Burning generates smoke, airborne soot, hydrocarbons and oxides of carbon, sulfur and nitrogen. Residue mainly comprised of soot and mineral oxides.

**Toxicological Information:**
- **Acute Toxicity:** Not known
- **Irritancy—Skin:** Very mild
- **Skin Sensitization:** Not known
- **Subacute / Sub-chronic Toxicity:** Not known
- **Genotoxicity:** None known
- **Chronic Toxicity:** None known

**Ecological Information:**
- **Possible Effects:** When released into the environment, adsorption to sediment and soil will be the predominant behavior.
- **Behavior:** Relatively well behaved. Bioaccumulation potential nil.
- **Environmental Fate:** Due to its fluid nature and specific gravity, this product will float or spread across water making it a nuisance contaminant. It is not thought to be toxic to marine or land organisms.

**Waste and Container Disposal:**
- **Waste Disposal:** Consider recycling. This product, as sold, does not meet the RCRA characteristics of a hazardous waste. Under RCRA, it is the responsibility of the user, at the time of disposal, to determine whether the product meets the RCRA criteria for hazardous waste. Contact a waste disposal company or local authority for advice.
- **Container Disposal:** See waste disposal section listed above.

**Transport Information:**
- **DOT:** Nonhazardous
- **UN No.:** N/A
- **DOT:** Nonhazardous

**Regulatory Information:**
- **Labeling Information:** None needed
- **EC Annex 1 Class.:** N/A
- **R Phrases:** N/A
- **SARA 311 / 312:** None
- **S Phrases:** S-3 keep cool, S-16 keep away from ignition sources
- **Ozone Depleting Chemicals:** N/A
- **CERCLA:** Nonhazardous
- **TSCA:** All components are listed
- **WHMIS (Canada):** Not regulated
- **Canadian DSL:** All components are listed
- **40 CFR Part 372 (SARA Section 313):** N/A
- **RCRA Hazard Class:** Nonhazardous
- **TSCA 12B Components:** None