**RUN-N-SEAL® EXTREME**

**METAL-FREE THREAD SEALANT**

**DESCRIPTION**

**JET-LUBE® RUN-N-SEAL® EXTREME** is a patented metal-free, high-pressure sealant alternative for API-MODIFIED. The compound contains graphite and other nonmetallic, inorganic, anti-wear additives blended into a state-of-the-art, high-temperature, rust-inhibiting complex soap-based grease. **RUN-N-SEAL EXTREME** contains a large volume of solids enhanced by a higher concentration of large-sized particles. The improved distribution of particle sizes and volume of solids provides an excellent seal in large and small diameter, non-shouldered threads. The complex soap grease provides a high melting point, ensures brushability over a wide range of temperatures and has excellent inherent water resistance. It sticks to wet and oily steel, ensuring the compound will not wash off threads.

**RUN-N-SEAL EXTREME** has been tested for California Code of Regulations - Title 22, Chapter 30, Article II and is not classified as a hazardous waste. **RUN-N-SEAL EXTREME** is nontoxic, even in a marine environment, as evidenced by test results on the California Hazardous Waste Assessment Bioassay and a "D" rating in the North Sea (OSPAR) Guidelines.

- Enhanced rust-inhibiting properties
- Friction factor of 0.9 (relative to API-MODIFIED)
- Contains additives for protection against rust, corrosion, and oxidation
- Prevents leakage (seals to 10,000 psi)
- High film strength to protect against wear, galling, and seizure
- Exceeds all of the performance criteria described in API spec. 5CT
- Tested in conformance with API RP 5A3
- H₂S Inhibited

**APPLICATIONS**

**RUN-N-SEAL EXTREME** is recommended for use on OCTG connections, API connections, and subsurface production tools. **RUN-N-SEAL EXTREME** will lubricate, seal, and protect threaded connections of oilfield tubular goods on makeup, in service, and in storage. For premium thread designs, use **JET-LUBE® SEAL-GUARD™**. For an environmentally friendly premium thread compound, use **JET-LUBE® SEAL-GUARD™ ECF**.

**PRODUCT CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickener</td>
<td>Complex Soap</td>
</tr>
<tr>
<td>Fluid Type</td>
<td>Petroleum</td>
</tr>
<tr>
<td>Dropping Point (ASTM D-2265)</td>
<td>450°F (232°C)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.23</td>
</tr>
<tr>
<td>Density (lbs./gal.)</td>
<td>10.25</td>
</tr>
<tr>
<td>Oil Separation</td>
<td>&lt; 3.0</td>
</tr>
<tr>
<td>Wt. % Loss @ 212°F (100°C)</td>
<td></td>
</tr>
<tr>
<td>Flash Point (ASTM D-92)</td>
<td>&gt; 450°F (232°C)</td>
</tr>
<tr>
<td>NLGI Grade</td>
<td>1</td>
</tr>
<tr>
<td>Penetration @ 77°F (ASTM D-217)</td>
<td>325 - 350</td>
</tr>
<tr>
<td>Copper Strip Corrosion (ASTM D-4048)</td>
<td>1A</td>
</tr>
<tr>
<td>4-Ball Weld Point, kgf (ASTM D2596)</td>
<td>800</td>
</tr>
<tr>
<td>Friction Factor (Relative to API-MODIFIED)</td>
<td>0.9</td>
</tr>
</tbody>
</table>

**PACKAGING**

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Container Size</th>
<th>Shipping Wt.</th>
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</thead>
<tbody>
<tr>
<td>12223</td>
<td>1 gal.</td>
<td>11 lb.</td>
</tr>
<tr>
<td>12212</td>
<td>2 gal.</td>
<td>22 lb.</td>
</tr>
<tr>
<td>12215</td>
<td>5 gal.</td>
<td>54 lb.</td>
</tr>
</tbody>
</table>

**LIMITED WARRANTY**

Jet-Lube, Inc. makes the Limited Express Warranty that at the date of delivery, this product shall be free from defects in Jet-Lube, Inc. materials and workmanship. This Limited Express Warranty is expressly in lieu of any other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligation on the part of Jet-Lube, Inc.

The sole remedy for breach of the Limited Express Warranty shall be the refund of the purchase price. All other liability is negated and disclaimed, and Jet-Lube, Inc. shall not be liable for incidental or consequential damages.

**CORPORATE LOCATIONS**

Maidenhead, England
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Edmonton, Canada

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PHONE: 713-674-7617
FAX: 713-678-4604
E-MAIL: sales@jettube.com
www.jettube.com
JET-LUBE, INC.  
MATERIAL SAFETY DATA SHEET

Product Name: RUN-N-SEAL® EXTREME  
Chemical Family: Petroleum based thread compound & sealant  
Use: Sealant for tubing, casing, line pipe & other tapered, threaded connections.

Hazardous Components  
<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Wt%</th>
<th>OSHAPEL</th>
<th>ACGIH TLV</th>
<th>Other Limits of Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum oil</td>
<td>64742570/64742525</td>
<td>60-100</td>
<td>Oil mist</td>
<td>N/A</td>
</tr>
<tr>
<td>Nonhazardous Blend</td>
<td>68307897/57855773</td>
<td>30-60</td>
<td>UN</td>
<td>TWA-5mg/M³</td>
</tr>
</tbody>
</table>

Main Hazards–Health Effects

Eyes: May cause irritation. **Inhalation:** Viscous nature may block breathing passages if inhaled. **Ingestion:** May cause diarrhea. **Skin:** For hypersensitive persons, may irritate the skin after prolonged periods of contact.

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. Consult physician. **Skin:** Wash thoroughly with hand cleanser, followed by soap & water. Contaminated clothing should be dry cleaned before reuse.

Extinguishing Media: Foam, dry powder, Halon®, carbon dioxide, sand, earth & water mist

Unsuitable Extinguishing Media: Water jet. **Protective Equipment for Fire fighting:** Self-contained breathing apparatus.

Personal Precautions: Wear gloves & protective overalls. **Environmental Precautions:** Do not allow it to enter drains. **Spillage:** Scrape up bulk, then wipe up remainder with cloth. To prevent walking hazard, pick up remaining residue with diatomaceous earth. **Handling:** No special handling precautions necessary. **Storage:** Do not store at elevated temperatures.

Respiratory Protection: None needed. **Hand Protection:** Protective gloves for hypersensitive persons. **Eye Protection:** Glasses, if applied to parts in motion. **Body Protection:** Overalls.

Physical State: Semisolid gel  
Color: Black  
Odor: Petroleum  
PH: Neutral  
Boiling Range/Point °F (°C): ~600 (316)

Melting Point °F (°C): 500 (260)  
Flash Point (COC) °F (°C): 450 (232)

Autoignition Temperature °F (°C): >500 (260)

Explosive Properties: LEL: 0.9%  
UEL: 7%  
Evaporation Rate (Butyl Acetate): <0.01  
Partition Coefficient (Log Pow): N/A

Vapor Pressure (kPa): <0.01  
Percent Volatiles: Nil  
Density (g/cm³): 1.23  
Flammability: Not flammable at ambient temperature.

OAR Value: N/A  
Oxidizing Properties: None  
Water Solubility: Nil  
Vapor Density: >5

Stability: Chemically stable under normal conditions. **Conditions to Avoid:** Powerful sources of ignition & extreme temps. **Materials to Avoid:** Strong inorganic & organic acids, oxidizing & copper reactive agents. **Hazardous Decomposition Products:** Burning generates smoke, airborne soot, hydrocarbons & oxides of carbon, sulfur & nitrogen. Residue mainly comprised of soot & mineral oxides.

Acute Toxicity: Not known. **Irritation–Skin:** Very mild. **Skin Sensitization:** Not known. **Subacute/Sub-chronic Toxicity:** Not known. **Genotoxicity:** None known. **Chronic Toxicity:** None known. **California Prop 65:** N/A  
Cardiogram: NTP: No IARC: No OSHA: No

EC Classification (67/548/EEC): No Allergens: None known. LC-50: >200mg/ml–extrapolated from component data  
LD-50: N/A

Possible Effects: In extreme cases, may generate oil fractions that could act as a marine pollutant. Occurrences of this nature are highly unlikely. **Behavior:** Relatively well behaved. Bioaccumulation potential nil.

Environmental Fate: Highly unlikely to cause widespread contamination. Nontoxic to marine or land organisms.

Product Disposal: Do not incinerate. Contact waste disposal company or local authority for advice.

Container Disposal: Pails without liner–see Product disposal section above. Pails with plastic liner–may only be disposed of via standard waste disposal services, recycled or reused. Liner–see Product disposal section above.

Not classified as hazardous for transport. **D.O.T.:** Nonhazardous  
**UN No.:** Nonhazardous  
**Air Transport (ICAO & IATA):** Nonhazardous  
**Sea Transport (IMO & IMDG):** Nonhazardous  
**Road & Rail Transport (ADR/RID):** Nonhazardous

Labeling Information: None needed  
**EC Annex 1 Classification:** Not Applicable  
**R Phrases:** R22–harmful if swallowed.

S Phrases: None applicable, as known. **Zone Depleting Chemicals:** Not applicable. TSCA: All components are listed.

WHMIS (Canada):Not controlled. **Canadian DSL:** All components listed. **40 CFR Part 372 (SARA Section 313):** None  
**SARA 311/312:** None  
**CERCLA:** Nonhazardous  
**RCRA Hazard Class:** Nonhazardous  
**TSCA 12B Components:** None

SDS first issued. **SDS data revised:** New Jersey Right To Know: See Section II

Signature: ____________________________  
Prepared by: Donald A. Oldiges  
Date Issued: October 30, 2007  
As of issue date, the information contained herein is accurate and relative to the best of JET-LUBE’s knowledge. JET-LUBE does not warrant or guarantee its accuracy or reliability and shall not be liable for any loss or damage arising out of the use thereof. It is the user’s responsibility to satisfy himself that the information offered for its consideration is suitable for its particular use.

LEGEND

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<th>HMSC SYMBOL</th>
<th>NFPA SYMBOL</th>
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<tbody>
<tr>
<td>HEALTH</td>
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</tr>
<tr>
<td>FLAMMABILITY</td>
<td>1</td>
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<tr>
<td>PP</td>
<td>1</td>
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PERSONAL PROTECTION IN DEX