

JET-LUBE, INC.

MATERIAL SAFETY DATA SHEET

Product Name: API-MODIFIED & API-SILICONE
Chemical Family: Petroleum based lubricating grease
Use: Tubing, casing and line pipe.

Manufacturer/Supplier: JET-LUBE, INC.
Address: 4849 Homestead Rd., Ste. #200
Houston, TX, 77028 USA **Phone:** 713-674-7617
Emergency Phone: 713-674-7617 **Fax:** 713-678-4604
Chemtrec 24 hours (USA): 800-424-9300

Hazardous Components	CAS No.	Wt%	OSHA PEL	ACGIH TLV	Other Limits of Exposure
Petroleum oil	64742014/64742525	30-40	Oil mist TWA-5mg/M ³	N/A	STEL: 10mg/M ³
Nonhazardous Blend	94166877/3159624 7620771/7782425	18-23	UN	UN	STEL: UN
Metallic Lead	7439921	29-31	0.05 mg/M ³	0.15/M ³	
Metallic Zinc	7440666	11.6-12.8	15mg/M ³	10mg/M ³	STEL: 10mg/M ³
Metallic Copper	7440508	3-3.6	N/A	1mg/M ³	STEL: 2mg/M ³

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 paste **Color:** Black/Brown **Odor:** Petroleum **pH:** Neutral **Boiling Range/Point °F (°C):** >525 (274)

Melting Point °F (°C): >280 (138) **Flash Point (COC) °F (°C):** >430 (221) **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 **% Volatiles:** Nil **Density (g/cm³):** MOD 1.97 SIL 2.08 **Flammability:** Not flammable at ambient temp.

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

Stability: Chemically stable under normal conditions. No photoreactive agents. **Conditions to Avoid:** Powerful sources of ignition & extreme temps.

Materials to Avoid: Strong inorganic & organic acids, oxidizing agents & metal reactive agents. **Hazardous Decomposition Products:** Burning generates smoke, airborne soot, hydrocarbons and oxides of carbon, sulfur & nitrogen. Residue mainly comprised of soot, metal & mineral oxides.

Acute Toxicity: Not known. **Irritancy-Skin:** Very mild. **Skin Sensitization:** Not known. **Subacute/Sub-chronic Toxicity:** Not known.

Genotoxicity: Yes, lead **Chronic Toxicity:** May result in birth defects, anemia, weight loss & impaired motor functions.

California Prop 65: Lead, Reproductive toxin & carcinogen **Carcinogen:** NTP: No IARC: Probable 2B **OSHA:** No **EC Class (67/548/EEC):** No **LC-50:** UN, presumed toxic **LD-50:** N/A **Allergens:** UN **Tetragens:** Yes, lead. **WHMIS (Canada):** D2A D2B

Possible Effects: May generate oil fractions and lead that could act as a marine pollutants. **Behavior:** Bioaccumulation potential of metallic lead is minimal. **Environmental Fate:** Highly unlikely to cause noticeable contamination. May be toxic to marine or land organisms. More dense than water with limited solubility or mobility.

Product Disposal: Don't incinerate. Contact waste disposal company or local authority for advice on leaded waste. EPA Waste Code D008

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

D.O.T.: Nonhazardous (insoluble lead)

UN No.: N/A

Air Transport (ICAO & IATA): Nonhazardous

Sea Transport (IMO & IMDG): Nonhazardous (insoluble lead)

Road & Rail Transport (ADR/RID): Nonhazardous

Labeling Information: None **EC Annex 1 Class:** N/A **R Phrases:** R22-harmful if swallowed. R33-danger of cumulative effects.

S Phrases: S41-burning may evolve toxic fumes. **Ozone Depleting Chemicals:** Not applicable. **TSCA:** All components are listed.

EINECS: All components listed. **Canadian DSL:** All components listed. **40 CFR Part 372 (SARA Sec. 313):** Contains lead, zinc & copper

CERCLA: Lead RQ-1 lb. **SARA 311/312 & RCRA Hazard Class:** Hazardous, contains lead. **TSCA 12B Components:** Zinc & Lead

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

Signature: _____

Prepared by: Donald A. Oldiges

Date Issued: October 22, 2003

As of issue date, the information contained herein is accurate and reliable 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 itself that the information offered for its consideration is suitable for its particular use.

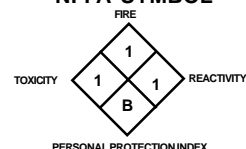
LEGEND

- I. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY
- II. COMPOSITION INFORMATION ON INGREDIENTS
- III. HAZARDS IDENTIFICATION
- IV. FIRST AID MEASURES
- V. FIRE FIGHTING MEASURES
- VI. ACCIDENTAL RELEASE MEASURES
- VII. HANDLING AND STORAGE
- VIII. EXPOSURE CONTROL/PERSONAL PROTECTION
- IX. PHYSICAL AND CHEMICAL PROPERTIES
- X. STABILITY AND REACTIVITY
- XI. TOXICOLOGICAL INFORMATION
- XII. ECOLOGICAL INFORMATION
- XIII. WASTE DISPOSAL
- XIV. TRANSPORT INFORMATION
- XV. REGULATORY INFORMATION
- XVI. OTHER INFORMATION

HMIS SYMBOL

HEALTH	1
FLAMMABILITY	1
REACTIVITY	1
PPI	B

NFPA SYMBOL



API-MODIFIED & API-SILICONE

HIGH PRESSURE THREAD COMPOUNDS

DESCRIPTION

JET-LUBE® API-MODIFIED & API-SILICONE are high-pressure thread compounds that conform to or exceed the requirements of API RP 5A3 and former API BUL 5A2. They also contain rust and oxidation inhibitors blended in **JET-LUBE's** unique grease compounded from custom-refined, low-sulfur oil to ensure brushability over a wide temperature range, tenacious adherence to all surfaces, resistance to water washout, and prevention of rust/corrosion.

API-MODIFIED & API-SILICONE will seal and withstand pressures to 10,000 psi and will not harden or dry.

The lubricating characteristics of **JET-LUBE API-MODIFIED & API-SILICONE** reduce friction in the makeup of casing and tubing, preventing galling and wear. Maximum thread engagement is ensured, providing optimum leak resistance.

Inhibitors in **API-MODIFIED & API-SILICONE** provide maximum protection against rust and corrosion of threaded surfaces. Both are conductive to reduce the possibility of electrolytic corrosion by preventing the formation of galvanic cells in the presence of salt water and other corrosive fluids.

Not recommended for rotary shouldered connections.

- Meets or exceeds API RP 5A3
- Additives for rust & corrosion protection
- Excellent lubrication qualities to prevent galling & wear
- Sticks to wet or oily threads
- Brushable over a wide temperature range
- Leak prevention to 10,000 psi
- Available in Arctic Grade
- California Proposition 65: Carcinogen & reproductive toxin

APPLICATIONS

JET-LUBE API-MODIFIED & API-SILICONE are specially formulated for use on casing, tubing, line pipe, flow lines, subsurface production tools, tank batteries, and will lubricate, seal and protect threaded connections of oilfield tubular goods on makeup, in service, and in storage.

API-SILICONE is especially recommended for use on connections exposed to high concentrations of gas distillates, moisture, and/or extreme temperatures.

PRODUCT CHARACTERISTICS

	API-MOD	API-SIL
Thickener	Soap	Soap/Silica
Fluid Type	Petroleum	Petroleum/Silicone
Color/Appearance	Black/Brown	Black/Brown
Dropping Point, typ. (ASTM D-2265)	>280°F (138°C)	>350°F (177°C)
Specific Gravity	1.97	2.08
Density (lb/gal)	16.4	17.3
Flash Point (ASTM D-92)	>430°F (221°C)	>430°F (221°C)
NLGI Grade	1	1
Friction Factor	1.0	1.0
Copper Strip Corrosion (ASTM D-4048)	1A	1A
Shell 4-Ball (ASTM D-2596)		
Weld Point, kgf	1000	1000
Load Wear Index	>130	130

API 5A2 SPECIFICATIONS

	API-MOD	API-SIL
Grease Base	36.0%±2.5%	20.5%±.5%
Silicone Compound	-----	12.9%±.3%
Silicone Fluid	-----	2.6%±.2%
Powered Graphite	18.0%±1.0%	18.0%±.2%
Lead Powder	30.5%±.6%	30.5%±1.0%
Zinc Dust	12.2%±.6%	12.2%±.6%
Copper Flake	3.3%±.3%	3.3%±.3%
Penetration (ASTM D-217)		
Worked @ 77°F	310 - 340	310 - 340
After Cooling @ 0°F	200 min.	200 min.
Dropping Point, Deg. °F (ASTM D-566)	190 min.	190 min.
Evaporation, Percent 24 hr. @ 212°F	2.0 max.	2.0 max.
Oil Separation, Percent 24 hr. @ 150°F (ASTM D-6184)	5.0 max.	5.0 max.
Gas Evolution, cc 150°F, 120 hr.	20 max.	20 max.
Water Leaching, Percent Wt. Loss	5.0 max.	5.0 max.
Brushability, App. @ 0°F	Pass	Pass
Service Range, Typical	0°F (-18°C) to 300°F (149°C)	-20°F (-29°C) to 435°F (224°C)

Shelf Life: Minimum 2 years from manufacture date.

PACKAGING

	Code No.	Container Size	Shipping Wt.
API-MOD	22123	10 lb.	11 lbs.
	22112	25 lb.	27 lbs.
	22114	50 lb.	54 lbs.
API-SIL	22712	25 lb.	27 lbs.

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

Houston, Texas—World Headquarters

Maidenhead, England

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