

IRMCO GEL®
IRMCO EXTREME®
ADVANCED TUBE FORMING TECHNOLOGIES



IRMCO GEL® and IRMCO EXTREME® forming film technologies are clean, non-oil alternatives to traditional animal fat and pigmented paste lubricants for the most demanding mandrel tube bending and forming applications.

CONTROLLED APPLICATION – CONSUMPTION REDUCED 50% – Through film's unique metal adhering nature and ability to be applied with IRMCO's automated in-tool application hardware, consumption can be reduced up to 50%. Inconsistent, excess application waste and housekeeping burden is eliminated.

TOOLING COST REDUCED 25% – Film provides a consistent barrier on all tooling surfaces, increasing mandrel ball and wiper die life an average of 25%.

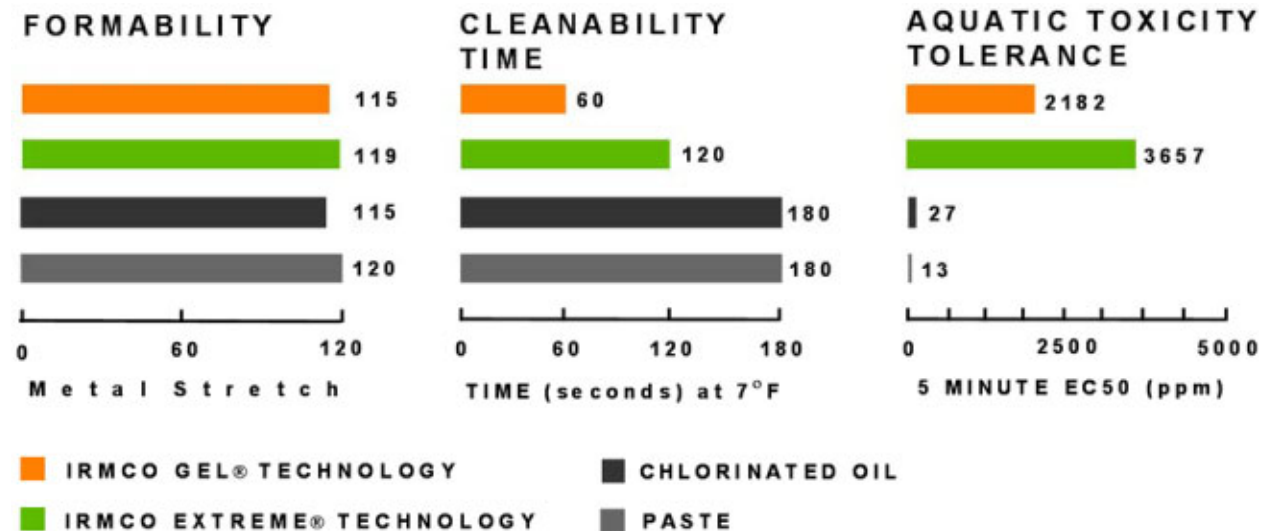
CLEAN ASSEMBLY – WELD WITHOUT WASH – Clean, thin film provides an improved surface condition for welding and assembly. Production studies using MIG, TIG, and resistance welding techniques have proven that in some cases welding can be achieved without prior washing*. Weld repairs and re-work due to lubricant residue can be eliminated or reduced significantly.

IMPROVED PARTS CLEANING & PAINT QUALITY– CHEMICAL COST REDUCED 50% – Film removes with a plain water first stage or mild alkaline cleaner. Cleaning and pre-treatment chemicals perform more efficient and last longer between system clean-outs. Washer disposal volume and cost can be reduced up to 50%. Paint quality improves, thus lubricant related paint rejects are eliminated.

200% LESS TOXIC – ISO 14001 COMPLIANCE – IRMCO GEL and IRMCO EXTREME do not contain oil or other constituents found on the SARA Title III Section 313 Toxic Chemical List, allowing for a significant reduction in cleaning chemical volume, waste treatment costs, and liability.

TECHNOLOGY PERFORMANCE

The performance data below provides a lab comparison of IRMCO GEL® and IRMCO EXTREME® product technologies to conventional technology. Metal formability is reported as the maximum uniaxial strain before fracture of a coated sample, relative to an uncoated sample. A higher relative value indicates better forming capabilities of a film using cold rolled steel. Cleanability is measured in the time it takes to completely remove film with 77° F water. A shorter time demonstrates superior ease of cleanability. IRMCO EXTREME® formability test performed on aluminized 409 stainless. All others on cold rolled steel. Acute aquatic toxicity is reported in parts per million (ppm) as the effective concentration 50% of population survive (EC50). A higher number indicates a less toxic material. For details on any of these tests, please contact IRMCO.



RECOMMENDED PRODUCT APPLICATIONS

Product	Application
IRMCO GEL® 980-000	General purpose bending of cold rolled, stainless steel, aluminized and titanium
IRMCO GEL® 980-301	Higher performance bending of cold rolled, stainless steel, aluminized and titanium
IRMCO EXTREME® 460-81A	Extreme performance bending of cold rolled, stainless steel, aluminum, aluminized & titanium

APPLICATION AND HANDLING GUIDELINES

Metal Compatibility	See IRMCO PAG (Product Application Guide). Due to variability among metal grades, compatibility should be evaluated on-site.
Dilution	Use concentrate product as supplied. Dilution is not appropriate.
Mixing	Not applicable.
Pump Application	IRMCO® APPLICATION HARDWARE SYSTEM
Parts Cleaning	IRMCO recommends a mild alkaline wash at a pH range of 7.0-10.0. The pH should not exceed 11.0 (alkaline) or be lower than 6.0 (acidic), a temperature between 110°F/43C -120°F/49C, not to exceed 150°F/65.5C.
Tool Cleanup	Use water-based cleaner such as IRMCO 819-000 Cleaner-Rust Inhibitor or IRMCO 957-000 Cleaner/Degreaser.
Equipment Paint	Equipment should be painted with alkaline resistant epoxy paint such as Tile Clad II (B62W101) from Sherwin-Williams Co. or Devran 250 from Devoe Coatings Co.
Handling and Storage	Container should be stored tightly closed and indoors at or near room temperature, approximately 68°F (20°C).
Disposal Considerations	Follow applicable regulations.
OEM Approvals	See IRMCO OEM Approvals list.
Export Limitations	See IRMCO MSDS and PAG for compliance information regarding any export limitations set by Canadian DSL, European EINECS, or Australian AICS lists.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance	GEL: Clear, EXTREME: opaque semi-solid	Flash Point	None
Boiling Point	Approximately 212°F (100°C)	Freezing/Melting Point	Approximately 32°F (0°C)
Density	8-8.5 lb/gal (0.96- 1.02 kg/L)	Solubility	GEL: water soluble, EXTREME: dispersible
Evaporation Rate	Nil	Specific Gravity	0.96 - 1.02

NOTICE TO USER

**IRMCO GEL® and IRMCO EXTREME® products have been used extensively throughout the world in a variety of manufacturing and production applications. It is the responsibility of users of IRMCO products to meet the component surface quality, process compatibility or cleanliness requirements of their customers. Given the complexity and variety of users applications and processes, IRMCO cannot predict all user conditions and results. If surface quality, process compatibility or cleanliness is a user concern, then IRMCO recommends removing/cleaning off the IRMCO product film from the components before final assembly and distribution of such components. User assumes all risk and liabilities associated with the products used.*