



LENIUM[®] FRA

Technical Data Sheet

LENIUM FRA is a fluorinated cleaning and rinsing agent designed to operate in mono-solvent, co-solvent and bi-solvent vapor degreasing applications. Used in combination with Petroferm's SOLVAG[™] SA-24 or SOLVAG[™] SA-70 solvating agent, this cleaning process removes oils, greases, fluxes and various waxes.

LENIUM FRA is selected for its compatibility with metallic alloys and polymers, non-ozone depleting potential and superior rinsing and drying characteristics.

LENIUM FRA is mixed with SOLVAG SA-24 or SA-70 in Petroferm's patented co-solvent vapor degreasing process. Suitable for use in dual sump vapor degreasers, this highly versatile process provides adjustability of both temperature and solvency in a single system. Furthermore, it is an economically feasible alternative to many fluorinated mono-solvents, such as hydrochlorofluorocarbons (HCFCs), hydrofluoroethers (HFEs) and hydrofluorocarbons (HFCs).

LENIUM FRA and SOLVAG SA-24 or SA-70 is used in separate tanks for bi-solvent vapor degreasing. In this two system process, the solvating agent may be heated to temperatures greater than in co-solvent vapor degreasing.

LENIUM FRA is also used neat (100%) for light-duty cleaning and rinsing in mono-solvent vapor degreasing, removing particulate matter, light oils and fluorinated lubricants and polymers.

LENIUM FRA is supported by a global network of technical representatives, capable of solving the industries most difficult cleaning applications.

LENIUM is a registered trademark of Petroferm Inc.
SOLVAG is a trademark of Petroferm Inc.

FEATURES & BENEFITS

- Rinsing Agent
- Plastic Compatibility
- Temperature Flexibility
- Adjustable Solvency
- Co-Solvent Patents
- Economic Alternative to Mono-Solvents
- Replaces HCFCs, HFEs, TCE
- Non-Ozone Depleting
- SNAP Approved Components
- SCAQMD VOC Exempt Components

CO-SOLVENT BOILING POINTS

SOLVAG SA-70		SOLVAG SA-24	
Percent (Vol.)	Boiling Point °F (°C)	Percent (Vol.)	Boiling Point °F (°C)
0	108 (42)	0	108 (42)
20	112 (44)	20	113 (45)
40	118 (48)	40	120 (49)
60	130 (54)	60	131 (55)
80	152 (67)	80	167 (75)

PROCESS

For co-solvent vapor degreasing, mix solvating and rinsing agent, adjusting the settings based on the mixtures boiling points.

Controller Settings

Liquid Temperature Controller/Sensor (LTC).....+10°F (+6°C)
 High Temperature Controller (HTC).....+15°F (+9°C)
 Safety Vapor Controller (SVC).....-10°F (-6°C)
 Vapor Up Temperature (VU).....-10°F (-6°C)
 Primary Refrigeration Temperature.....35-40°F (2-5°C)

SOILS REMOVED

- Fluorinated Lubricants
- Fluorinated Polymers
- Fluxes (Co-/Bi-Solvent)
- Greases (Co-/Bi-Solvent)
- Heavy Oils (Co-/Bi-Solvent)
- Light Oils
- Particulates
- Waxes (Co-/Bi-Solvent)

LENIUM FRA

PATENTS

Co-Solvent Process

Patent 5,716,457 - Cleaning with solvating and rinsing agents

Co-Solvent Fluids

Patent 6,187,729 - Cleaning composition comprising solvating agent and rinsing agent

PROPERTIES

Appearance.....	Clear liquid
Flash Point.....	None
Boiling Point.....	108°F (42°C)
Specific Gravity (25°C).....	1.28
Viscosity (25°C).....	0.34 cps
Vapor Pressure (20°C).....	398 mm Hg
Surface Tension (25°C).....	14.8 dyne/cm
Kauri-Butanol (KB) Value.....	11-12
Specific Heat (25°C).....	0.30
Heat of Vaporization.....	41.4 cal/g
Solubility of Water.....	720 ppm

SHELF LIFE

The shelf life for this product is thirty-six (36) months when it is stored in its original, sealed container at room temperature.

However, the product should be inspected after thirty-six (36) months from the date of manufacture prior to customer use.

Typical property data is not intended for specification purposes. Petroferm, its sales agents and distributors make no warranty of merchantability of the product or of product fitness for any particular purpose. This product and all information supplied are used at the purchaser's own risk, conditions of use being beyond Petroferm's knowledge or control. The purchaser assumes all risk of use or handling of the product, whether in accordance with directions or not.

ENVIRONMENTAL/REGULATORY

Ozone Depletion Potential (ODP).....	Zero
Global Warming Potential (GWP).....	890-1300
Volatile Organic Compound (VOC).....	*No
Significant New Alternatives Program (SNAP).....	**Approved
Hazardous Air Pollutant (HAP).....	No
National Emission Standards for Hazardous Air Pollutants (NESHAPs).....	Not regulated
Superfund Amendments and Reauthorization Act (SARA).....	Not regulated
Resource Conservation and Recovery Act (RCRA).....	Not regulated

**per SCAQMD Rule 102 **LENIUM FRA components*

DISPOSAL/SAFETY

Disposal: Petroferm recommends contacting your current or local environmental service company for disposal of this product.

Safety: Please see Material Safety Data Sheet for further information.

Storage: LENIUM FRA should be stored in the original container, preferably above 50°F (10°C), in a ventilated, fire-resistant building.

Packaging: LENIUM FRA is available in 45 lb (20 kg) pails and 530 lb (240 kg) drums.



Petroferm

Advanced Products for Advanced Cleaning

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