

# AXAREL<sup>®\*</sup> 56

## Precision Cleaner

**Description** AXAREL 56 Precision Cleaner is a blend of highly-refined mixed aliphatic hydrocarbons and esters formulated to offer the ideal balance of selective solvency, high flash point, and low toxicity. It is a semi-aqueous cleaning agent suitable for removing a wide variety of soils in immersion cleaning applications.

AXAREL 56 is designed to promote superior water rinsing of cleaned articles. The product allows for excellent separation of the cleaning agent and dissolved soils from the rinse water. This product contains no rust inhibitors, making it ideal for special applications requiring minimum residues. If a rust inhibitor is desired, use **AXAREL 52**.

**Applications** AXAREL 56 conducts effective removal of a broad range of soils. It is recommended for cleaning oils, greases, and high-melting waxes from metal, glass, and plastic substrates. It has been proven to remove cutting oil, thick shell alvania grease, and carnauba wax from stainless steel more efficiently than either 1,1,1-trichloroethane or CFC-113. The product is particularly useful for removing buffing and lapping compounds and particulate contamination.

### Typical Properties

**Table 1. AXAREL 56**

Appearance	Colorless to light yellow liquid
Flash Point (Pensky-Martens Closed Cup)	<200°F (<93°C)
Specific Gravity @ 25°C	0.84 ± 0.01
Viscosity @ 25°C	2.9 cps
Vapor Pressure @ 20°C	0.1 mm Hg
Odor	Mild

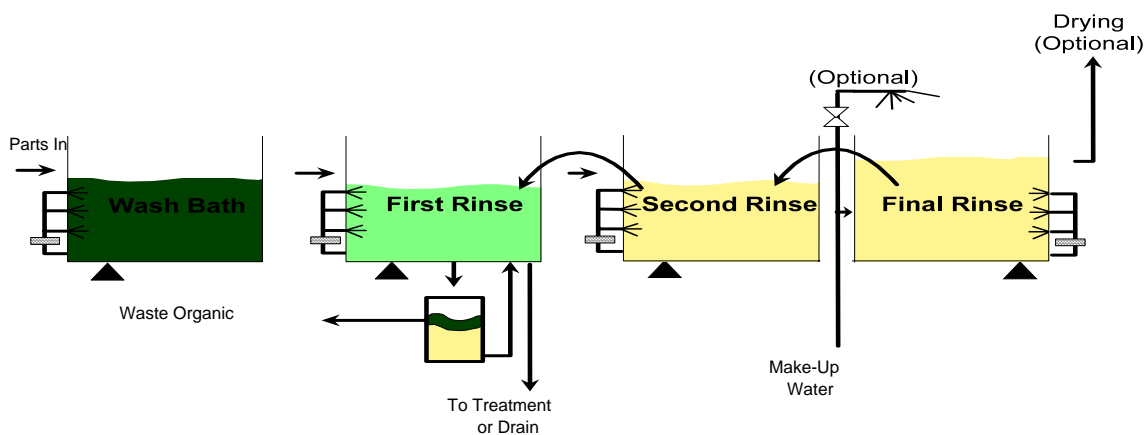
**Process** AXAREL 56 is designed for utilization in semi-aqueous immersion-cleaning processes. Emulsions of AXAREL 56 and water may be more

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effective for removal of soils such as buffing compounds; experience will dictate which technique is better.

AXAREL 56 is suitable for use in a variety of commercially available cleaning equipment including ultrasonic systems, mechanically agitated immersion tanks, semi-aqueous spray systems, forced air dryers, and vacuum dryers. Figure 1 depicts a typical process for use with AXAREL 56.

**Figure 1.**



**Typical Semi-Aqueous Process Steps**

Steps	Process Details
1. <b>Wash</b> the parts in a bath of AXAREL 56.	The wash bath should be heated to 140 to 160°F, depending upon the particular soil to be removed. Use mechanical or ultrasonic agitation in the wash bath to speed the cleaning process.
2. <b>Rinse</b> the residual AXAREL 56 and dissolved soil from the parts.	AXAREL 56 rinses easily with heated, agitated water. Most systems incorporate two or three successive rinses as shown in Figure 1.
3. <b>Dry</b> the parts as necessary.	If drying assistance is required to remove the residual rinse water from the parts, use any appropriate method: ambient air, oven, forced air, centrifugal force, hand wipe, or other.

**Compatibility**

AXAREL 56 is compatible virtually all metals including aluminum, magnesium, carbon steels, stainless steels, nickel-containing alloys, cobalt-containing alloys, and titanium alloys. The product is also compatible with many types of plastics and elastomers encountered in precision applications.

**Table 2. Effects of AXAREL 56 on Plastics and Elastomers**

Plastic <sup>1</sup>	Compatibility Rating	Elastomer <sup>2</sup>	Percent Weight Change	Percent Linear Swell
ABS	Compatible	BUNA N	70	20*
ACETAL (Delrin, Celcon)	Compatible	Hypalon®	15	6
ACRYLIC (Lucite, Plexiglas)	Compatible	Nordel®	30	10**
CELLULOSE	Incompatible	Vamac®	40	15
EPOXY	Compatible	Viton® A	0.6	0
PTFE	Compatible	Viton® B	0.4	0
PVDF	Compatible	Viton® GF	0.3	0.9
IONOMER	Incompatible	ALCRYN®	10	5
NYLON	Compatible	BUTYL RUBBER	100	30**
POLYACRYLATE	Compatible	NATURAL RUBBER	150	40*
POLYCARBONATE	Compatible	THIOKOL FA®	-0.1	0
PBT	Compatible	THIOKOL ST®	1.3	0.3
PET	Compatible	Kalrez®	0	-0.9
POLYIMIDE	Compatible	NEOPRENE	30	9*
POLYETHYLENE	Compatible	HYTREL®	4	1.4
POLYPROPYLENE	Probably Incompatible	SILICONE	50	15
POLYETHERIMIDE	Compatible	ADIPRENE®	2	0
POLYPHENYLENE OXIDE	Compatible	BUNA S	15	6*
POLYPHENYLENE SULFIDE	Compatible			
POLYSTYRENE	Incompatible			
POLYSULFONE	Compatible			
PVC	Compatible			
CPVC	Compatible			

1. Tests conducted at room temperature, one day immersion.
  2. Tests conducted at 50°C, one week immersion.
- \* Gross loss of tensile strength  
 \*\* Surface disintegrated

Hypalon, Kalrez, Nordel and Viton are registered trademarks of DuPont Dow Elastomers.; Vamac is a registered trademark of DuPont.

**Environmental and Regulatory**

**Table 3.**

Ozone Depletion Potential (ODP)	Zero
Global Warming Potential (GWP)	Low
Volatile Organic Compound (VOC)	837 g/l (EPA Method 24)
Significant New Alternatives Program (SNAP)	Approved
Hazardous Air Pollutants (HAP)	No
National Emission Standards for Hazardous Air Pollutants (NESHAP)	Not regulated
Superfund Amendments and Reauthorization Act (SARA)	Not regulated
Resource Conservation and Recovery Act (RCRA)	Not regulated

**Safety and Toxicity**

Please see Material Safety Data Sheet for detailed information.

**Disposal**

Petroferm recommends contacting your current or local environmental service company for disposal of this product. The suggested method of disposal is fuel blending. AXAREL 56 has fuel value in excess of 15,000

BTU per pound. Its flash point is greater than 140°F (60°C) and is not a hazardous waste as defined in 40 CFR 261.

<b>Packaging</b>	AXAREL 56 is available in 5-gallon pails (35lb/16 kg) and 55-gallon drums (385 lb/175 kg). Samples are available in one-quart and one-gallon containers.
<b>Storage</b>	AXAREL 56 should be stored in the original container, preferably in a cool, ventilated, fire-resistant building.
<b>Shelf Life</b>	The shelf life for this product is indefinite when it is stored in its original, sealed container at room temperature. However, the product should be inspected after the designated date on the product label (twenty-four months from the date of manufacture) prior to customer use.

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