



## RADCOLUBE® FR282 HYDRAULIC FLUID

### SAFETY DATA SHEET

MIL-PRF-83282D(1) HYDRAULIC FLUID, FIRE RESISTANT, LOW TEMPERATURE, SYNTHETIC HYDROCARBON BASE,  
AIRCRAFT AND MISSILE, NATO Code Number H-537.

#### 1. PRODUCT AND COMPANY IDENTIFICATION

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##### Product Name

RADCOLUBE® FR282 HYDRAULIC FLUID

This product meets Military Specification MIL-PRF-83282D(1), HYDRAULIC FLUID, FIRE RESISTANT, LOW TEMPERATURE, SYNTHETIC HYDROCARBON BASE, AIRCRAFT AND MISSILE, NATO Code Number H-537.

##### Qualification Number (Effective Date)

AIR-4.3.4.6 Ser 17-0010 (2 November 2016)

Ser 15-0004 (2 February 2015)

ISO 9001:2015 Certification Number: C2018-00035

##### Recommended Use

This specification covers the requirements for a synthetic hydrocarbon-base hydraulic fluid for use in the temperature range of -40° to +205°C.

##### National Stock Numbers (NSN):

9150-00-149-7431	Quart
9150-00-149-7432	Gallon
9150-01-009-7709	10 Gallon Pail or Drum
9150-00-180-6290	55 Gallon Drum

##### Company Identification

Headquarters (CAGE Code 6ZS16)  
Radco Industries, Inc.  
700 Kingsland Drive  
Batavia, IL 60510

Manufacturing Facility (CAGE Code 1RVC4)  
Radco Industries, Inc.  
39W930 Midan Drive  
LaFox, IL 60147

Customer information number: 1-630-232-7966

##### EMERGENCY TELEPHONE NUMBER

**Advisory Office in case of poisoning: Chemtrec**

Chemtrec (North America): 1-800-424-9300

#### 2. HAZARDS IDENTIFICATION

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##### Classification of mixture:

Aspiration hazard, Category 1

##### Hazard Pictograms:





**Signal Word:** DANGER

**Hazard Statements:**

H304:	May be fatal if swallowed and enters airways.
H315 + H320:	Causes skin and eye irritation.
H401:	Toxic to aquatic life.

**Precautionary Statements:**

P243:	Take precautionary measures against static discharge
P273:	Avoid release to the environment.
P301 + P315 +P331:	IF SWALLOWED: Do NOT induce vomiting. Get immediate medical attention.
P305 + P351:	IF IN EYES: Rinse cautiously with water for several minutes.
P350:	Gently wash with soap and water.
P362:	Take off contaminated clothing and wash before reuse.
P405:	Store locked up.
P501:	Dispose of contents and container to an approved waste disposal plant.

**NFPA Hazard ID**

Health: 1  
Flammability: 1  
Reactivity: 0

**HMIS Hazard ID**

Health: 1  
Flammability: 1  
Reactivity: 0

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	%Content	CAS Number
Polyalphaolefin	Proprietary	Proprietary
Additive Package	Proprietary	Proprietary

**4. FIRST-AID MEASURES**

**Eyes**

Immediately flush eyes with plenty of water for at least 15 minutes.

**Ingestion**

If swallowed, drink plenty of water, DO NOT induce vomiting. Immediately call a doctor.

**Inhalation**

Move to fresh air. If unconscious place in recovery position and seek medical advice. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. Remove from further exposure. Immediately call a doctor.

**Skin**

Wash exposed skin with soap and water.

**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media**

For small fires use carbon dioxide, dry chemical or foam.  
For large fires use alcohol-type foam, universal type foam or water fog.

**Fire-Fighting Equipment**

Firefighter should wear normal protective equipment (full bunker gear) and positive-pressure contained breathing apparatus. Water can be used to cool fire-exposed containers, to protect personnel and to disperse vapors and spills. Water runoff can cause environmental damage. Dike and collect water used to fight fires.



### Special Fire-Fighting Procedures

Use water spray to cool fire-exposed containers and structures. If a rail or tank truck is involved in a fire, isolate for 800 meters (0.5 mile) in all directions. Shut off fuel to fire if it is possible to do so without hazard. If this is impossible, withdraw from the area and let the fire burn out under controlled conditions. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire.

## 6. ACCIDENTAL RELEASE MEASURES

Wear protective clothing when taking up spill. Eliminate sources of ignition. This product is insoluble in water and will float on the surface. Prevent from entering sewers or drains. Should this product enter sewers or drains, it should be pumped out into an open vessel.

## 7. HANDLING AND STORAGE

### Handling

Do not breathe vapors/dust. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.

### Storage

Do not store in open or unlabeled containers. Keep container tightly closed in a dry and well-ventilated place.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits

No established.

### Respiratory Protection

Use with adequate ventilation. Avoid breathing vapor. If heated and ventilation is inadequate, use NIOSH certified respirator, which will protect against organic vapor.

### Hand Protection

Wear clothing and gloves that are chemical or oil resistant.

### Eye Protection

Safety glasses, chemical goggles, or face shields recommended to prevent contact.

### Other Protection

Do not eat, drink, or smoke when handling this product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Transparent, red liquid
Odor:	Odorless
Odor threshold:	Not determined
Auto-ignition temperature:	340°C (644°F)
Decomposition temperature:	Not determined
Evaporation Rate (ASTM D972):	17.8% after 6.5 hours at 205°C (401°F)
Flash point Cleveland Open Cup (ASTM D92):	220°C (428°F)
Flash point Pensky-Martens (ASTM D93):	Not determined
Flammability (solid, gas):	Non-flammable
Lower flammability limit:	Not determined
Upper flammability limit:	Not determined
Initial boiling point and boiling range:	> 300°C (572°F)



Melting point/freezing point:	Not determined
Partition coefficient (n-octanol/water), Log P <sub>ow</sub> :	Not determined
pH:	Not applicable
Solubility:	Water insoluble
Relative density (ASTM D1298) 15.6°C/15.6°C:	0.85
Vapor density:	Not available
Vapor pressure:	< 0.1 mmHg at 20°C (68°F)
Viscosity (ASTM D445):	1.1 mm <sup>2</sup> /s at 205°C 3.5 mm <sup>2</sup> /s at 100°C (212°F) 14.1 mm <sup>2</sup> /s at 40°C(104°F) 1,900 mm <sup>2</sup> /s at -40°C (-40°F)

## 10. STABILITY AND REACTIVITY INFORMATION

### Materials to avoid

Avoid exposure to highly oxidizing substances.

### Hazardous polymerization

Does not occur.

### Hazardous decomposition products

Incomplete combustion may give various cracked and oxidized hydrocarbons.

### Stability

Stable

## 11. TOXICOLOGICAL INFORMATION

Acute toxicity	Method	Species	Result
Polyalphaolefin	Dermal Inhalation Oral	Rat Rat Rat	LD <sub>50</sub> > 2000 mg/kg LC <sub>50</sub> = 5.0 mg/L after 1 hour LD <sub>50</sub> > 2000 mg/kg
Additive Package	--	--	Not expected to be hazardous.

Aspiration hazard	Test Method	Species	Result
Polyalphaolefin	OECD 403	Rat	Aspiration hazard, Category 1
Additive Package	--	--	No data available

Carcinogenicity	Results
Polyalphaolefin	Not classified as carcinogen by IARC, NTP and OSHA.
Additive Package	Not classified as carcinogens by IARC, NTP and OSHA.

Eye damage / irritation	Test Method	Species	Results
Polyalphaolefin	OECD 405	Rabbit	Not irritating
Additive Package	--	--	Not expected to be hazardous.

Germ cell mutagenicity	Test Method	Species	Results
Polyalphaolefin	OECD 471	<i>S. typhimurium</i>	Not mutagenic
Additive Package	--	--	Not expected to be mutagenic.

Reproductive toxicity	Test Method	Species	Results
Polyalphaolefin	OECD 415	Rat	No reproductive harm
Additive Package	--	--	Not expected to be hazardous.

**Respiratory sensitization**

No data available

Skin sensitization	Test Method	Species	Results
Polyalphaolefin	OECD 406	Guinea pig	Not sensitizing
Additive Package	--	--	Not expected to be sensitizing.

Skin corrosion/irritation	Test Method	Species	Results
Polyalphaolefin	OECD 404	Rabbit	Not irritating
Additive Package	--	--	Not expected to be irritant.

Specific target organ toxicity (STOT)-repeated exposure	Test Method	Species	Results
Polyalphaolefin	--	--	No data available
Additive Package	--	--	Not expected to be hazardous.

**Specific target organ toxicity (STOT)-single exposure**

No data available

**12. ECOLOGICAL CONSIDERATIONS**

Aquatic Toxicity	Test Method	Species	Results
Polyalphaolefin	OECD 203 OECD 211 DIN 38412-8	<i>D. magna</i> <i>O. mykiss</i> <i>P. putida</i>	NOEL = 125 mg/L after 21 days LL <sub>50</sub> > 1000g/L after 96 hours EC <sub>50</sub> > 10g/L after 16 hours
Additive Package	--	--	Not expected to be hazardous.

Biodegradation	Test Method	Results
Polyalphaolefin	OECD 301B	Not readily biodegradable
Additive Package	--	No data available

Partition Coefficient n-octanol / water (Log K <sub>ow</sub> )	Results
Polyalphaolefin	Log K <sub>ow</sub> = 10.09
Additive Package	No data available

**13. DISPOSAL INFORMATION**

Disposal must be in accordance with applicable federal, state, or local regulations.

Do not allow product to reach ground water, water course, or sewage systems.

This unused material, when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however, it could be considered hazardous if it meets criteria for being toxic, corrosive, ignitable, or reactive according to U.S. EPA definitions (40 CFR Subpart C). This material could also become hazardous waste if it is mixed with or comes into contact with a listed hazardous waste. If it is a hazardous waste, regulations in 40 CFR 262-266, 268, 270, and 279 may apply.

“Empty” containers retain residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition; they may explode and cause injury or death. Do not attempt to clean since residue is difficult to remove and even a trace of remaining material constitutes as explosive hazard. “Empty” drums should be completely drained, properly bunged, and promptly returned to a drum recycler. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

**14. TRANSPORT INFORMATION****United States Department of Transportation (DOT)**

Not regulated



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**Canada Transport - Transportation of Dangerous Goods (TDG)**

Not regulated

**International Air Transport Association (IATA)**

Not regulated

**International Carriage of Dangerous Goods by Inland Waterways (AND)**

Not regulated

**International Carriage of Dangerous Goods by Rail (RID)**

Not regulated

**International Carriage of Dangerous Goods by Road (ADR)**

Not regulated

**International Civil Aviation Organization (ICAO)**

Not regulated

**International Maritime Dangerous Goods Code (IMDG Code)**

Not regulated

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**15. REGULATORY INFORMATION**

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**California (Proposition 65)**

This product does not contain any of the substances known to the State of California to cause cancer, birth defects, or reproductive harm.

**CERCLA Reportable Quantity**

This product is not reportable under 40 CFR Part 302.4.

**Environmental Protection Agency**

None of the ingredients are listed.

**National Toxicology Program (NTP)**

None of the ingredients are listed.

**OSHA Hazard Communication Standard**

Not hazardous per 29 CFR 1910.1200(d).

**SARA Title III Section 302 Extremely Hazardous Substances (40 CFR Part 355)**

This product is not regulated under Section 302 of SARA and 40 CFR Part 355.

**SARA Title III Sections 311/312 Hazardous Categorization (40 CFR Part 370)**

Hazardous categories for this product are: Acute=no; Chronic=no; Fire=no; Pressure=no; Reactive=no.

**SARA Title III Section 313 (40 CFR Part 372)**

This product is not regulated under Section 313 of SARA and 40 CFR Part 372.

**U.S. Inventory (TSCA)**

Listed on inventory.

**Australia Inventory (AICS)**

Listed on inventory.



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**Canada Inventory (DSL)**

All of the ingredients are listed.

**China (CICS)**

None of the ingredients are listed.

**EC Inventory (EINECS/ELINCS)**

In Compliance

**International Agency for Research on Cancer (IARC)**

None of the ingredients are listed.

**Japan Inventory (MITI)**

Listed on inventory.

**Korea Inventory (ECL)**

Listed on inventory.

**16. OTHER INFORMATION**

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Safety Data Sheet Creation Date: 1 September 2010

Safety Data Sheet Revision Date: 23 March 2018

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