



RADCOLUBE® FR170

SAFETY DATA SHEET

**MIL-PRF-46170E TYPE I HYDRAULIC FLUID, RUST INHIBITED, FIRE RESISTANT, SYNTHETIC HYDROCARBON
BASE, NATO CODE NO. H-544**

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: RADCOLUBE® FR170 HYDRAULIC FLUID

This product meets Military Specification MIL-PRF-46170E TYPE I - Undyed, Military Symbol FRH, NATO Code No. H-544.

Qualification Number (Effective Date)

HF-71 (20 February 2015)

HF-78 (17 May 2019)

ISO 9001:2015 Certification Number: C2018-00035

Recommended Use

This product covers the requirements for one type of synthetic hydrocarbon base hydraulic fluid for use in the -40°C to 200°C (-40°F to 392°F) temperature range in recoil mechanisms and ground vehicle and equipment hydraulic systems. This hydraulic fluid will not be used for aircraft systems, aircraft ground support equipment, or the preservation of aircraft components.

National Stock Numbers (NSN):

9150-01-332-7819	Pint
9150-00-111-6256	Quart
9150-00-111-6254	Gallon
9150-00-111-6255	5 Gallon Pail
9150-01-158-0462	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

Classification of mixture:

Aspiration Hazard, Category 1

Eye Irritation, Category 2

Skin Irritation, Category 2

**Hazard Pictograms:****Signal Word:**

DANGER

Hazard Statements:

H304:	May be fatal if swallowed and enters airways.
H315:	Causes skin irritation.
H319:	Causes serious eye irritation.

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 advice/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/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

<u>Chemical Name</u>	<u>% Composition</u>	<u>CAS Number</u>
Polyalphaolefin	Proprietary	Proprietary
Barium alkylnaphthalenesulfonate	< 1%	25619-56-1
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

None 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 by 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 liquid
Odor:	Faint, oily



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Odor threshold:	Not Determined
Auto-ignition temperature:	Not Determined
Decomposition temperature:	Not Determined
Evaporation Rate (ASTM D972):	Not Determined
Flash point Cleveland Open Cup (ASTM D92):	248°C (478°F)
Flash point Pensky-Martens (ASTM D93):	Not Determined
Flammability (solid, gas):	Not flammable
Lower flammability limit:	Not Determined
Upper flammability limit:	Not Determined
Initial boiling point and boiling range:	Not Determined
Melting point/freezing point:	Not Determined
Partition coefficient (n-octanol/water), Log P _{ow} :	Not Determined
pH:	Not applicable
Solubility in water:	< 0.1%
Relative density (ASTM D1298) 15.6°C/15.6°C:	0.85
Vapor density:	Not Determined
Vapor pressure:	< 1 mmHg at 25°C (77°F)
Viscosity (ASTM D445):	4.2 mm ² /s (cSt) at -40°C (-40°F) 15 mm ² /s (cSt) at 40°C (104°F) 2,400 mm ² /s (cSt) at 100°C (212°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	Rat	LD ₅₀ > 2000 mg/kg
	Inhalation	Rat	LC ₅₀ = 5.0 mg/L after 1 hour
	Oral	Rat	LD ₅₀ > 2000 mg/kg
Barium alkylnaphthalenesulfonate	Dermal	Rabbit	LD ₅₀ = 10,000 mg/kg
	Inhalation	Rat	NOEC = 21 mg/L after 1 hour
	Oral	Rat	LD ₅₀ = 1750 mg/kg
Additive Package	--	--	Not expected to be hazardous.

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

**Carcinogenicity**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by ACGIH, IARC, NTP or OSHA.

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

Germ cell mutagenicity	Test Method	Species	Results
Polyalphaolefin	OECD 471	<i>S. typhimurium</i>	Not mutagenic
Barium alkyl naphthalenesulfonate	--	--	No data available
Additive Package	--	--	Not expected to be mutagenic.

Reproductive toxicity	Test Method	Species	Results
Polyalphaolefin	OECD 415	Rat	No reproductive harm
Barium alkyl naphthalenesulfonate	--	--	No data available
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
Barium alkyl naphthalenesulfonate	--	--	Not sensitizing
Additive Package	--	--	Not expected to be sensitizing.

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

Specific target organ toxicity (STOT)-repeated exposure	Test Method	Species	Results
Polyalphaolefin	--	--	No data available
Barium alkyl naphthalenesulfonate	--	--	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	<i>D. magna</i>	NOEL = 125 mg/L after 21 days
	OECD 211	<i>O. mykiss</i>	LL ₅₀ > 1000g/L after 96 hours
	DIN 38412-8	<i>P. putida</i>	EC ₅₀ > 10g/L after 16 hours
Barium alkyl naphthalenesulfonate	OECD 201	Algae	EC ₁₀ = 0.16 mg/L after 72 hours
	OECD 202	<i>Daphnia sp.</i>	NOEC = 0.27 mg/L after 48 hours
	Not reported	Fish	LC ₅₀ > 0.28 mg/L after 96 hours
Additive Package	--	--	Not expected to be hazardous.



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

Partition Coefficient n-octanol / water (Log K _{ow})	Results
Polyalphaolefin	Log K _{ow} = 10.09
Barium alkylnaphthalenesulfonate	Log K _{ow} = 6.7
Additive Package	No data available

13. DISPOSAL INFORMATION

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.

14. TRANSPORT INFORMATION

United States Department of Transportation (DOT)

Not regulated

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

15. REGULATORY INFORMATION

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.



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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.

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

Safety Data Sheet Creation Date: 2 February 2010

Safety Data Sheet Revision Date: 17 May 2019

The information herein is given in good faith, but no warranty, expressed or implied, is made. Consult **Radco Industries, Inc.** for further information.



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