



RADCOLUBE® RHP6083 HYDRAULIC FLUID

SAFETY DATA SHEET

MIL-PRF-6083G HYDRAULIC FLUID, PETROLEUM BASE, FOR PRESERVATION AND OPERATION

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name

RADCOLUBE® RHP6083 HYDRAULIC FLUID

This product meets Military Specification MIL-PRF-6083G.

Qualification Number (Effective Date)

H-6057 (31 October 2014)

H-6062 (9 August 2016)

ISO 9001:2015 Certification C2018-00035

Recommended Use

This product meets the requirements for one grade of petroleum base hydraulic fluid for use in the -54°C to +135°C (-65.2°F to 275°F) temperature range. This fluid is rust inhibited, and is used both as a preservative for hydraulic systems and components as well as being an operational fluid. This hydraulic fluid will not be used for aircraft systems, aircraft ground support equipment, or the preservation of aircraft components. The hydraulic fluid is identified by Military Symbol OHT and NATO Symbol C-635.

National Stock Numbers (NSN):

9150-00-935-9807	Quarts
9150-00-935-9808	Gallon
9150-00-935-9809	5 Gallon Pail
9150-00-935-9810	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:

Aquatic toxicity, chronic hazard	Category 2
Aspiration hazard	Category 1
Skin Irritation	Category 2
Specific target organ toxicity (STOT)-single exposure (inhalation)	Category 3 (narcosis)

Hazard Pictogram:



Signal Word:

DANGER

**Hazard Statements:**

H304:	May be fatal if swallowed and enters airways.
H315:	Causes skin and eye irritation.
H319:	Causes serious eye irritation.
H336:	May cause drowsiness or dizziness.
H411:	Toxic to aquatic life with long-lasting effects.

Precautionary Statements:

P202:	Do not handle until all safety precautions have been read and understood.
P261:	Avoid breathing vapors.
P262 + P280:	Do not get in eyes, on skin, or on clothing, and use personal protective equipment as required.
P270:	Do not eat, drink or smoke when using this product.
P273:	Avoid release to the environment.
P280:	Wear protective gloves, protective clothing, eye protection, and face protection.
P301 + P315 + P330 + P331:	IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Get immediate medical attention.
P304 + P315 + P341:	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical attention.
P305 + P315 + P338 + P351:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get immediate medical attention.
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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	% Composition	CAS Number
Distillates (petroleum), hydrotreated light naphthenic	Trade Secret	64742-53-6
White mineral oil (petroleum)	Trade Secret	8042-47-5
Barium alkylnaphthalenesulfonate	< 2%	25619-56-1
Acrylic copolymer	Trade Secret	Trade Secret
Additive package	Trade Secret	Trade Secret

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**

<u>Component</u>	<u>CAS Number</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>
Acrylic copolymer	Trade Secret	None established	None established
Additive package	Trade Secret	None established	None established
Barium alkylnaphthalenesulfonate	25619-56-1	0.5 mg/m ³ as Ba	0.5 mg/m ³ as Ba
Distillates (petroleum), hydrotreated light naphthenic	64742-53-6	5 mg/m ³	5 mg/m ³
White mineral oil (petroleum)	8042-47-5	5 mg/m ³	5 mg/m ³

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 cannot be penetrated by chemicals or oil.

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:	Red liquid
Odor:	Light bland petroleum
Odor threshold:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Evaporation Rate (ASTM D972):	Not available
Flash point Cleveland Open Cup (ASTM D92):	Not applicable
Flash point Pensky-Martens (ASTM D93):	106°C (223°F)
Flammability (solid, gas):	Not flammable
Lower flammability limit:	Not available
Upper flammability limit:	Not available



Initial boiling point and boiling range:	Not available
Melting point/freezing point:	Not available
Partition coefficient (n-octanol/water), Log P _{ow} :	Not available
pH:	Not applicable
Solubility:	< 0.1% in water
Relative density (ASTM D1298) 15.6°C/15.6°C:	0.87
Vapor density:	Not available
Vapor pressure:	< 1.0 mmHg at 25°C (77°F)
Viscosity (ASTM D445):	16.8 cSt at 40°C (104°F) 480 cSt at -40°C (-40°F) 2,600 cSt at -54°C (-65°F)

10. STABILITY AND REACTIVITY INFORMATION

Materials to avoid

Exposure to materials which are highly oxidizing should be avoided.

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
1-Decene, homopolymer, hydrogenated	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
Acrylic copolymer	Dermal	Rat	LD ₅₀ > 2000 mg/kg
	Inhalation	Rat	No data available
	Oral	Rat	LD ₅₀ > 2000 mg/kg
Barium bis(dinonylnaphthalenesulphonate)	Dermal	Rabbit	LD ₅₀ = 10,000 mg/kg
	Inhalation	Rat	NOEC = 21 mg/L after 1 hour
	Oral	Rat	LD ₅₀ = 1750 mg/kg
Distillate (petroleum), hydrotreated middle	Dermal	Rabbit	LD ₅₀ > 2000 mg/kg body weight
	Inhalation	Rat	LC ₅₀ = 1.78 mg/L
	Oral	Rat	LD ₅₀ > 5000 mg/kg body weight
Proprietary components	--	--	Not classified

Aspiration hazard	Test Method	Species	Result
1-Decene, homopolymer, hydrogenated	OECD 403	Rat	Aspiration hazard, Category 1
Acrylic copolymer	--	--	No data available
Barium bis(dinonylnaphthalenesulphonate)	--	--	No data available
Distillate (petroleum), hydrotreated middle	OECD 403	Rat	Aspiration hazard, category 1
Proprietary components	--	--	Not classified

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
1-Decene, homopolymer, hydrogenated	OECD 405	Rabbit	Not irritating
Acrylic copolymer	--	--	Irritant
Barium bis(dinonylnaphthalenesulphonate)	--	--	Irritating
Distillate (petroleum), hydrotreated middle	OECD 405	Rabbit	Not irritating
Proprietary components	--	--	Not classified

Germ cell mutagenicity	Test Method	Species	Results
1-Decene, homopolymer, hydrogenated	OECD 471	<i>S. typhimurium</i>	Not mutagenic
Acrylic copolymer	--	--	No data available
Barium bis(dinonylnaphthalenesulphonate)	--	--	No data available
Distillate (petroleum), hydrotreated middle	--	--	No data available
Proprietary components	--	--	No data available

Reproductive toxicity	Test Method	Species	Results
1-Decene, homopolymer, hydrogenated	OECD 415	Rat	No reproductive harm
Acrylic copolymer	--	--	No data available
Barium bis(dinonylnaphthalenesulphonate)	--	--	No data available
Distillate (petroleum), hydrotreated middle	--	--	No data available
Proprietary components	--	--	No data available

Respiratory sensitization

No data available

Skin sensitization	Test Method	Species	Results
1-Decene, homopolymer, hydrogenated	OECD 406	Guinea pig	Not sensitizing
Acrylic copolymer	--	--	No data available
Barium bis(dinonylnaphthalenesulphonate)	--	--	Not sensitizing
Distillate (petroleum), hydrotreated middle	OECD 406	Guinea pig	Not sensitizing
Proprietary components	--	--	Not classified

Skin corrosion/irritation	Test Method	Species	Results
1-Decene, homopolymer, hydrogenated	OECD 404	Rabbit	Not irritating
Acrylic copolymer	--	--	Irritant
Barium bis(dinonylnaphthalenesulphonate)	--	--	Irritant
Distillate (petroleum), hydrotreated middle	OECD 404	Rabbit	Not irritating
Proprietary components	--	--	Not classified

Specific target organ toxicity (STOT)-repeated exposure	Method	Species	Results
1-Decene, homopolymer, hydrogenated	--	--	No data available
Acrylic copolymer	--	--	No data available
Barium bis(dinonylnaphthalenesulphonate)	--	--	No data available
Distillate (petroleum), hydrotreated middle	Oral	Rat	NOAEL \geq 5 mL/kg body weight per day
Proprietary components	--	--	No data available

Specific target organ toxicity (STOT)-single exposure	Results
1-Decene, homopolymer, hydrogenated	No data available
Acrylic copolymer	Category 3 by inhalation (narcosis)
Barium bis(dinonylnaphthalenesulphonate)	No data available
Distillate (petroleum), hydrotreated middle	No data available
Proprietary components	No data available

12. ECOLOGICAL CONSIDERATIONS



Aquatic Toxicity	Test Method	Species	Results
1-Decene, homopolymer, hydrogenated	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 ₅₀ > 1000g/L after 96 hours EC ₅₀ > 10g/L after 16 hours
Acrylic copolymer	Not reported	<i>L. macrochirus</i>	LC ₅₀ = 2.2 mg/L after 96 hours
Barium bis(dinonylnaphthalenesulphonate)	OECD 201 OECD 202 Not reported	Algae <i>Daphnia sp.</i> Fish	EC ₁₀ = 0.16 mg/L after 72 hours NOEC = 0.27 mg/L after 48 hours LC ₅₀ > 0.28 mg/L after 96 hours
Distillate (petroleum), hydrotreated middle	OECD 201 OECD 203 QSAR model	Algae <i>O. mykiss</i> <i>D. magna</i>	NOEL = 10 mg/L after 752 hours LL ₅₀ > 1000 mg/L after 24 hours NOEL = 0.163 mg/L
Proprietary components	--	--	Not classified

Terrestrial Toxicity	Test Method	Species	Results
1-Decene, homopolymer, hydrogenated	OECD 222	<i>Earthworm</i>	LC50 > 1000 mg/kg after 56 days
Acrylic copolymer	--	--	No data available
Barium bis(dinonylnaphthalenesulphonate)	--	--	No data available
Distillate (petroleum), hydrotreated middle	QSAR model	<i>Mallard duck</i>	NOEL > 5000ppm
Proprietary components	--	--	Not classified

Biodegradation	Test Method	Results
1-Decene, homopolymer, hydrogenated	OECD 301B	Not readily biodegradable
Acrylic copolymer	--	No data available
Barium bis(dinonylnaphthalenesulphonate)	OECD 301B	Not readily biodegradable
Distillate (petroleum), hydrotreated middle	--	No data available
Proprietary components	--	No data available

Bioconcentration Factor (BCF)	Results
1-Decene, homopolymer, hydrogenated	No data available
Acrylic copolymer	No data available
Barium bis(dinonylnaphthalenesulphonate)	No data available
Distillate (petroleum), hydrotreated middle	BCF < 500
Proprietary components	No data available

Partition Coefficient n-octanol / water (Log K _{ow})	Results
1-Decene, homopolymer, hydrogenated	Log K _{ow} = 10.09
Acrylic copolymer	No data available
Barium bis(dinonylnaphthalenesulphonate)	Log K _{ow} = 6.7
Distillate (petroleum), hydrotreated middle	Log K _{ow} > 4
Proprietary components	No data available

Soil Mobility	Results
1-Decene, homopolymer, hydrogenated	No data available
Acrylic copolymer	No data available
Barium bis(dinonylnaphthalenesulphonate)	Log K _{ow} = 5.24
Distillate (petroleum), hydrotreated middle	Log K _{ow} > 3.0
Proprietary components	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

**U.S. Dept. of Transportation Shipping Name****Not regulated:**

49 CFR 171.4c: (1) Except when all or part of the transportation is by vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicle, rail car or aircraft. (2) Single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other requirements of this subchapter provided the packagings meet the general requirements in 173.24 and 173.24a.

Canadian Transportation of Dangerous Goods Shipping Name (TDG)

UN Number: UN3082
UN Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DISTILLATE (PETROLEUM), HYDROTREATED MIDDLE MIXTURE)
Transport hazard class: 9
Packing group: III

Not regulated (450-liter or less inner packaging):

Special Provision 99 (2): These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.

International Air Transport Association (IATA)

Not regulated

International Carriage of Dangerous Goods by Inland Waterways (ADN)

UN Number: UN3082
UN Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DISTILLATE (PETROLEUM), HYDROTREATED MIDDLE MIXTURE)
Transport hazard class: 9
Packing group: III
MARPOL73/78 and IBC Code: P
Emergency schedules (EmS): F-A, S-F
Special provisions: 274; 335; 375; 601

Not regulated (5-liter or less inner packaging):

Special Provision 375: These substances when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or 5 kg or less for solids, are not subject to any other provision of ADN provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 of ADR.

International Carriage of Dangerous Goods by Rail (RID)

UN Number: UN3082
UN Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DISTILLATE (PETROLEUM), HYDROTREATED MIDDLE MIXTURE)
Transport hazard class: 9
Packing group: III
Special provisions: 274; 335; 375; 601

Not regulated (5-liter or less inner packaging):

Special Provision 375: These substances when carried in single or combination packagings containing a net quantity per single or inner packaging or 5 l or less for liquids having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of the RID provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

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

UN Number: UN3082
UN Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DISTILLATE (PETROLEUM), HYDROTREATED MIDDLE MIXTURE)
Transport hazard class: 9
Packing group: III
Special provisions: 274; 335; 375; 601

Not regulated (5-liter or less inner packaging): **Special Provision 375:** These substances when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of ADR provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

International Civil Aviation Organization (ICAO)

Not regulated (5-liter or less inner packing): **Special Provision A197:** These substances when transported in single or combination packagings containing net quantity per single or inner packaging of less than 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

International Maritime Dangerous Goods Code (IMDG Code)

UN Number: UN3082
UN Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DISTILLATE (PETROLEUM), HYDROTREATED MIDDLE MIXTURE)
Transport hazard class: 9
Packing group: III
MARPOL73/78 and IBC Code: P
Emergency schedules (EmS): F-A, S-F
Special provisions: 274; 335; 969

Not regulated (5-liter or less inner packing): **2.10.2.7:** Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provision of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this Code relevant to any additional hazards continue to apply.

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.

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: 1 September 2010

Safety Data Sheet Revision Date: 8 October 2018

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

THIS INFORMATION RELATES TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PARTICULAR PROCESS OR FOR ANY PARTICULAR PURPOSE. SUCH INFORMATION STATED IS TO THE BEST OF RADCO'S KNOWLEDGE AND BELIEF, ACCURATE AND RELIABLE AS OF THE DATE COMPILED. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE TO ITS ACCURACY, RELIABILITY, OR COMPLETENESS, PURCHASERS, USERS AND DISTRIBUTORS ARE NOT RELYING ON ANY PROMISE, REPRESENTATION, OR RECOMMENDATION MADE BY RADCO, AND RADCO DOES NOT ACCEPT LIABILITY FOR ANY LOSS OR DAMAGE THAT MAY OCCUR FROM THE USE OF THIS INFORMATION. FINAL DETERMINATION OF SUITABILITY OF ANY MATERIAL IS THE SOLE RESPONSIBILITY OF THE USER. ALL MATERIAL SHOULD BE USED WITH CAUTION TO GUARD AGAINST UNKNOWN HAZARDS. ALTHOUGH CERTAIN HAZARDS ARE DESCRIBED HEREIN, RADCO DOES NOT GUARANTEE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

RADCOLUBE® is a registered trademark of Radco Industries, Inc.