



RADCOLUBE® RHP5606

SAFETY DATA SHEET

MIL-PRF-5606J HYDRAULIC FLUID, PETROLEUM BASE; AIRCRAFT, MISSILE, AND ORDNANCE

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name

RADCOLUBE® RHP5606 HYDRAULIC FLUID

This product meets Military Specification MIL-PRF-5606J.

Qualification Number (Effective Date)

AFPET/PTPT 14-015 (16 September 2014)

AFPET/PTPT 16-003 (11 March 2016)

ISO 9001:2015 Certification C2018-00035

Recommended Use

This product meets the requirements for a petroleum base hydraulic fluid for use in the -54°C to +135°C temperature range. The hydraulic fluid is identified by Military Symbol OHA and NATO Code No. H-515

National Stock Numbers (NSN):

9150-00-252-6383	Quart
9150-00-223-4134	Gallon
9150-00-082-7524	5 Gallon Pail
9150-00-265-9408	55 Gallon Drum

Company Identification

Headquarters (CAGE 6ZS16)

Radco Industries, Inc.

700 Kingsland Drive

Batavia, IL 60510

Manufacturing Facility (CAGE 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 irritation.
H319:	Causes serious eye irritation.
H336:	May cause drowsiness or dizziness.
H410:	Very 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 vapours.
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

<u>Chemical Name</u>	<u>%Composition</u>	<u>CAS Number</u>
Distillates (petroleum), hydrotreated light naphthenic	Trade Secret	64742-53-6
Hydrogenated polyalphaolefin	Trade Secret	Trade Secret
Acrylic copolymer	Trade Secret	Trade Secret
Non-hazardous components	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

Component	Occupational exposure limits	
Acrylic copolymer	None established	
Hydrogenated polyalphaolefin	None established	
Distillate (petroleum), hydrotreated middle	ACGIH TLV: (United States, 4/2014) AFS 2011:18 (Sweden, 12/2011) AFS 2011:18 (Sweden, 12/2011) NIOSH REL: (United States, 10/2013) NIOSH REL: (United States, 10/2013) OSHA PEL: (United States, 2/2013)	TWA = 5 mg/m ³ 8 hours (inhalable fraction) TWA = 1 mg/m ³ , 8 hours STEL = 3 mg/m ³ , 15 minutes TWA = 5 mg/m ³ 10 hours (mist) STEL = 10 mg/m ³ 15 minutes (mist) TWA = 5 mg/m ³ 8 hours (mist)
Non-hazardous components	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 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, transparent liquid
Odor:	Light bland petroleum



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):	Not Determined
Flash point Pensky-Martens (ASTM D93):	92°C (198°F)
Flammability (solid, gas):	Flammable Liquid, Category 4: Combustible Liquid
Lower flammability limit:	Not Determined
Upper flammability limit:	Not Determined
Initial boiling point and boiling range:	Not Determined
Melting point/freezing point:	< -81°C (-178°F)
Partition coefficient (n-octanol/water), Log P _{ow} :	Not Determined
pH:	Not applicable
Solubility:	Water insoluble
Relative density (ASTM D1298) 15.6°C/15.6°C:	0.87
Vapor density:	Not Determined
Vapor pressure:	< 1.0 mmHg at 25°C (77°F)
Viscosity (ASTM D445):	5.72°C at 100°C (212°F) 15.6 cSt at 40°C (104°F) 459 cSt at -40°C (-40°F) 1,910 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
Acrylic copolymer	Dermal	Rat	LD ₅₀ > 2000 mg/kg
	Inhalation	Rat	No data available
	Oral	Rat	LD ₅₀ > 2000 mg/kg
Hydrogenated polyalphaolefin	Dermal	Rabbit	LD ₅₀ > 5000 mg/kg
	Inhalation	Rat	LC ₅₀ > 5 mg/L after 4 hours
	Oral	Rat	LD ₅₀ > 2000 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
Non-hazardous components	--	--	Not classified



Aspiration hazard	Test Method	Species	Result
Acrylic copolymer	--	--	No data available
Hydrogenated polyalphaolefin	OECD 403	Rat	Aspiration hazard, category 1
Distillate (petroleum), hydrotreated middle	OECD 403	Rat	Aspiration hazard, category 1
Non-hazardous 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
Acrylic copolymer	--	--	Irritant
Hydrogenated polyalphaolefin	OECD 405	Rabbit	Not irritating
Distillate (petroleum), hydrotreated middle	OECD 405	Rabbit	Not irritating
Non-hazardous components	--	--	Not classified

Germ cell mutagenicity	Test Method	Species	Results
Acrylic copolymer	--	--	No data available
Hydrogenated polyalphaolefin	OECD 471 OECD 474	<i>S. typhimurium</i> Mouse	Not mutagenic Not mutagenic
Distillate (petroleum), hydrotreated middle	--	--	No data available
Non-hazardous components	--	--	No data available

Reproductive toxicity	Results
Acrylic copolymer	No data available
Hydrogenated polyalphaolefin	Not expected to be hazardous
Distillate (petroleum), hydrotreated middle	No data available
Non-hazardous components	No data available

Respiratory sensitization

No data available

Skin sensitization	Test Method	Species	Results
Acrylic copolymer	--	--	No data available
Hydrogenated polyalphaolefin	OECD 406	Guinea pig	Not sensitizing
Distillate (petroleum), hydrotreated middle	OECD 406	Guinea pig	Not sensitizing
Non-hazardous components	--	--	Not classified

Skin corrosion/irritation	Test Method	Species	Results
Acrylic copolymer	--	--	Irritant
Hydrogenated polyalphaolefin	OECD 404	Rabbit	Not irritating
Distillate (petroleum), hydrotreated middle	OECD 404	Rabbit	Not irritating
Non-hazardous components	--	--	Not classified

Specific target organ toxicity (STOT)-repeated exposure	Method	Species	Results
Acrylic copolymer	--	--	No data available
Hydrogenated polyalphaolefin	--	--	No data available
Distillate (petroleum), hydrotreated middle	Oral	Rat	NOAEL ≥ 5 mL/kg body weight per day
Non-hazardous components	--	--	No data available

Specific target organ toxicity (STOT)-single exposure	Results
Acrylic copolymer	Category 3 by inhalation (narcosis)
Hydrogenated polyalphaolefin	No data available
Distillate (petroleum), hydrotreated middle	No data available
Non-hazardous components	Not expected to be hazardous.

12. ECOLOGICAL CONSIDERATIONS



Aquatic Toxicity	Test Method	Species	Results
Acrylic copolymer	--	<i>L. macrochirus</i>	LC ₅₀ = 2.2 mg/L after 96 hours
Hydrogenated polyalphaolefin	EPA OTS 797.1050 OECD 202 OECD 211	<i>P. subcapitata</i> <i>Daphnia sp.</i> <i>D. magna</i>	NOELR > 1000 mg/L WAF after 96 hours EL ₅₀ > 1000 mg/L after 48 hours NOELR = 125 mg/L WAF after 21 days
Distillate (petroleum), hydrotreated middle	OECD 201 OECD 203 QSAR model	<i>Algae</i> <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
Non-hazardous components	--	--	Not classified

Terrestrial Toxicity	Test Method	Species	Results
Acrylic copolymer	--	--	No data available
Hydrogenated polyalphaolefin	OECD 222	<i>Eisenia sp.</i>	LC ₅₀ > 1000mg/kg after 56 days EC ₅₀ = 630 mg/kg after 56 days NOEC = 500 mg/kg after 56 days
Distillate (petroleum), hydrotreated middle	QSAR model	<i>Mallard duck</i>	NOEL > 5000ppm
Non-hazardous components	--	--	Not classified

Biodegradation	Test Method	Results
Acrylic copolymer	--	No data available
Hydrogenated polyalphaolefin	CEC L-33-T-82	CO ₂ = 39.4%. Not readily biodegradable
Distillate (petroleum), hydrotreated middle	--	No data available
Non-hazardous components	--	No data available

Bioconcentration Factor (BCF)	Results
Acrylic copolymer	No data available
Hydrogenated polyalphaolefin	No data available
Distillate (petroleum), hydrotreated middle	BCF < 500
Non-hazardous components	No data available

Partition Coefficient n-octanol / water (Log K _{ow})	Results
Acrylic copolymer	No data available
Hydrogenated polyalphaolefin	No data available
Distillate (petroleum), hydrotreated middle	Log P _{ow} > 4
Non-hazardous components	No data available

Soil Mobility	Results
Acrylic copolymer	No data available
Hydrogenated polyalphaolefin	log K _{oc} > 6.2
Distillate (petroleum), hydrotreated middle	Log K _{ow} > 3.0
Non-hazardous 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

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: 27 December 2013

Safety Data Sheet Revision Date: 8 October 2018

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