



RADCOLUBE® 17111

SAFETY DATA SHEET

MIL-DTL-17111E(1) POWER TRANSMISSION FLUID

Issue Date: 2 June 2015

Revision Date: 30 March 2018

Revision Number: 3.0

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name: RADCOLUBE® 17111

Specifications: MIL-DTL-17111E with Amendment 1

ISO 9001:2015 Certification Number: C2018-00035

NATO Code: H-575

National Stock Numbers (NSN): 9150-00-261-8317 5-gallon pails
9150-00-261-8318 55-gallon drums

1.2 Relevant identified uses of the substance or mixture and uses advised against

This product is for use in the hydraulic transmission of power, particularly in naval ordnance hydraulic equipment.

1.3 Details of the supplier of the safety data sheet

Headquarters and Manufacturing Facility
Radco Industries, Inc.
700 Kingsland Drive
Batavia, IL 60510
CAGE Code 6ZS16

Customer information number: 1-630-232-7966

1.4 Emergency Telephone Number

Advisory Office in case of poisoning: Chemtrec
Chemtrec (North America): 1-800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Aquatic environment, acute hazards:	Category 3
Aquatic environment, chronic hazards:	Category 4
Aspiration hazard:	Category 1
Eye irritation:	Category 2
Skin irritation:	Category 2
Specific target organ – single exposure (inhalation)	Category 3

Classification of mixture is in accordance with United Nations (UN) Globally Harmonized System of Classification and Labelling of Chemicals (GHS), sixth revised edition (2015), and United States Standard 29 CFR 1910 Occupational Safety and Health Standards.

See SECTION 16 for toxicity category definitions.

2.1 Label elements

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**Hazard pictograms:** Health Hazard**Signal word:** **DANGER****Hazard statements**

H304:	May be fatal if swallowed and enters airways.
H313:	May be harmful in contact with skin.
H315:	Causes skin irritation.
H320:	Causes eye irritation.
H336:	May cause drowsiness or dizziness.
H412:	Harmful to aquatic life with long lasting effects

Precaution statements

P101:	If medical advice is needed, have product container or label at hand.
P202:	Do not handle until all safety precautions have been read and understood.
P240:	Ground/bond container and receiving equipment.
P243:	Take precautionary measures against static discharge.
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/face protection.
P301 + P331 + P315:	IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Get immediate medical advice/attention.
P303 + P353:	IF ON SKIN (or hair): Rinse skin with water/shower.
P304 + P340 + P342 + P315:	IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms, get immediate medical advice/attention.
P305 + P351 + P338 + P310:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
P306 + P363:	IF ON CLOTHING: Wash contaminated clothing before reuse.
P404:	Store in a closed container.
P501:	Dispose of contents/container to in accordance with local/regional/national/international regulation.

2.2 Other hazards**PBT and vPvB**

PBT and vPvB assessment is not available as chemical safety assessment has not been conducted.

NFPA Hazard IDHealth: 1
Flammability: 1
Reactivity: 0**HMIS Hazard ID**Health: 1
Flammability: 1
Reactivity: 0**SECTION 3. Composition/information on ingredients****3.1 Substances**

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Acrylic copolymer

Index number: Not available
 CAS number: Trade secret
 EC number: Trade secret
 REACH number: Not available
 Synonyms: --

Distillates (petroleum), hydrotreated light

Index number: 649-422-00-2
 CAS number: 64742-47-8
 EC number: 265-149-8
 REACH number: 01-2119484819-18
 Synonyms: Hydrotreated light distillate; Hydrotreated light distillates (petroleum); Low odor paraffinic solvent

Distillates, petroleum, hydrotreated light paraffinic

Index number: 649-468-00-3
 CAS number: 64742-55-8
 EC number: 265-158-7
 REACH number: 01-2119487077-29
 Synonyms: Mineral oil, petroleum distillates, hydrotreated (mild) light paraffinic;

Non-hazardous components

Index number: Not available
 CAS number: Trade Secret
 EC number: Trade Secret
 REACH number: Not available
 Synonyms: Trade Secret

3.2 Mixtures

Component	CAS Number	EC Number	%Content	Classification of Labeling	M-Factor
Distillates (petroleum), hydrotreated light	64742-47-8	265-149-8	> 50%	Asp. Tox. 1 – H304	0
Distillates, petroleum, hydrotreated light paraffinic	64742-55-8	265-158-7	< 50%	Asp. Tox. 1 – H304	0
Acrylic copolymer	Trade Secret	Trade Secret	Trade Secret	Asp Tox. 2 – H332 Skin Irrit. 2 – H315 STOT-SE 3 – H336	0
Naphthylamine derivative	Trade Secret	Trade Secret	Trade Secret	Aquatic Acute 2 – H302 Aquatic Chronic 2 – H411 Eye Irrit. 2 – H319 Skin Irrit. 2 – H315	1
Non-hazardous components	Proprietary	Proprietary	Proprietary	Not classified	0

M-Factor determinations are in accordance with UN GHS, sixth revised edition (2015).

See SECTION 16 for full text of the toxicity categories and H-statements listed in this section.

Indicative occupational exposure limit values

Component	Specific Concentration limits
Acrylic copolymer	None established
Distillates (petroleum), hydrotreated light	See SECTION 8 for exposure limits.

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Distillates, petroleum, hydrotreated light paraffinic	See SECTION 8 for exposure limits.
Naphthylamine derivative	None established
Non-hazardous components	None established

SECTION 4. FIRST AID MEASURES**4.1 Description of first aid measures****Eye contact**

Upon accidental eye exposure, wash the eyes promptly with water for at least 20 minutes. If wearing contact lenses, remove them if safe to do so, and continue washing. Get medical attention immediately.

Ingestion

If swallowed, do not induce vomiting. Rinse mouth out with water. Get medical attention immediately.

Inhalation

If respiratory irritation, dizziness, or nausea occurs, move to fresh air and keep at rest in a comfortable position for breathing. If symptoms persist or unconsciousness occurs, seek immediate medical assistance.

Skin contact

Wash skin thoroughly with mild soap and plenty of water for at least 20 minutes. If irritation develops, seek medical advice.

Note to physicians

Treat symptomatically.

4.2 Most important symptoms and effects, both acute and delayed**Acute symptoms****Eye exposure symptoms**

Direct eye exposure may lead to redness and lacrimation (crying tears).

Ingestion symptoms

Small amounts may cause nausea. Large amounts may lead to abdominal obstruction (cramps), constipation or diarrhea.

Inhalation symptoms

May cause irritation of the nose, throat, and lungs.

Skin exposure symptoms

Short-term exposure is not expected to cause irritation.

Delayed symptoms**Eye exposure symptoms**

None expected, however seek medical attention if irritation persists.

Ingestion symptoms

None expected, however seek medical attention if abdominal obstruction, constipation or diarrhea persists.

Inhalation symptoms

None expected, however seek medical attention if respiratory irritation persists.

Skin exposure symptoms

Repeated exposure may lead to irritation. If rash develops, seek medical attention.

4.3 Indication of any immediate medical attention and special treatment needed

Suggestions for clinical testing and medical monitoring for delayed effects are not known. Use first aid when applicable, and seek guidance from a medical physician for specific treatment.

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SECTION 5. FIREFIGHTING MEASURES**5.1 Extinguishing media**

Suitable extinguishing media includes alcohol-resistant foam, carbon dioxide, dry chemical or water fog.

5.2 Special hazards arising from the substance or mixture

No data is available.

5.3 Advice for firefighters**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.

SECTION 6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Wear personal protective equipment (PPE). Eliminate sources of ignition, if safe to do so. Avoid breathing vapors or mist. Evacuate to designated safe areas.

For emergency responders

If possible, move individual to safe area, and treat symptomatically.

6.2 Environmental precautions

Contain spill, if safe to do so. Prevent from entering sewers or drains.

6.3 Methods and material for containment and cleaning up

Use oil absorbent material to soak up product on the ground. Should this product enter sewers or drains, it should be pumped out into an open vessel. The recovered material should be discarded as hazardous waste.

6.4 Reference to other sections

If appropriate, refer to SECTION 8 and SECTION 13 for additional information.

SECTION 7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Use personal protective equipment (PPE) when handling this product. Smoking, eating and drinking should be prohibited in the application area.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s)

For use in systems that require MIL-DTL-17111 type fluids.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

Component	Occupational exposure limits
Acrylic copolymer	None established
Distillates (petroleum), hydrotreated light	ACGIH TLV: (United States, 4/2014) TWA = 5 mg/m ³ 8 hours (inhalable fraction) AFS 2011:18 (Sweden, 12/2011) TWA = 1 mg/m ³ , 8 hours AFS 2011:18 (Sweden, 12/2011) STEL = 3 mg/m ³ , 15 minutes NIOSH PEL: (United States, 10/2013) TWA = 5 mg/m ³ 10 hours (mist) NIOSH PEL: (United States, 10/2013) STEL = 10 mg/m ³ 15 minutes (mist) OSHA PEL: (United States, 2/2013) TWA = 5 mg/m ³ 8 hours (mist)
Distillates, petroleum, hydrotreated light paraffinic	ACGIH TLV: (United States, 4/2014) TWA = 5 mg/m ³ 8 hours (inhalable fraction) AFS 2011:18 (Sweden, 12/2011) TWA = 1 mg/m ³ , 8 hours AFS 2011:18 (Sweden, 12/2011) STEL = 3 mg/m ³ , 15 minutes NIOSH PEL: (United States, 10/2013) TWA = 5 mg/m ³ 10 hours (mist) NIOSH PEL: (United States, 10/2013) STEL = 10 mg/m ³ 15 minutes (mist) OSHA PEL: (United States, 2/2013) TWA = 5 mg/m ³ 8 hours (mist)
Naphthylamine derivative	None established
Non-hazardous components	None established

Biological exposure limits

None established for any of the disclosed components.

8.2 Exposure controls**Appropriate engineering controls**

Practice general industrial hygiene. Do not eat, drink or smoke near product. Wash hands after handling. Remove clothing and wash separate from other laundry.

Personal protective equipment (PPE)**Eye/face protection**

Safety glasses, chemical safety goggles and/or face shields are recommended when handling this product.

Skin protection

For extended handling, wear oil resistant gloves such as neoprene. Nitrile gloves may be appropriate for short handling periods use. Contact a government approved or accredited manufacturer for specific recommendations.

Other protections

Wear protective clothing ensuring minimal skin exposure. Protective clothing should be chemically impervious to oils and other solvents.

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.

Environmental exposure controls

Do not allow product to reach ground water, water course, or sewage systems. Stop leaks, if safe to do so. Contain spills with absorbent or adsorbent materials.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

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Appearance:	Clear, light orange liquid
Odor:	Light bland petroleum
Odor threshold:	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Evaporation Rate:	Not determined
Explosive properties:	Not determined
Flammability (solid, gas):	Flammable Liquid, Category 4: Combustible Liquid
Lower flammability limit:	Not determined
Upper flammability limit:	Not determined
Flash point Cleveland Open Cup (ASTM D92):	Not determined
Flash point Pinsky-Martens (ASTM D93):	>104°C (219.2°F)
Initial boiling point and boiling range:	Not determined
Melting point/freezing point:	Not determined
Oxidizing properties:	Not determined
Partition coefficient (n-octanol/water), Log P _{ow} :	Not determined
pH:	Not applicable
Relative density (ASTM D1298) 15.6°C/15.6°C (60°F/60°F):	0.87
Solubility in water:	Insoluble
Vapor density:	Not determined
Vapor pressure:	Not determined
Viscosity (ASTM D445):	25.4 cSt at 40°C 8.3 cSt at 100°C

9.2 Other information

No further information is available.

SECTION 10. STABILITY AND REACTIVITY**10.1 Reactivity**

Non-reactive in its original state.

10.2 Chemical stability

Stable in its original state.

10.3 Possibility of hazardous reactions

Does not occur.

10.4 Conditions to avoid

Oxidizing materials

10.5 Incompatible materials

Keep away from strong oxidizing or reducing agents, including acids, caustics, chlorites (bleach), halogens and peroxides.

10.6 Hazardous decomposition products

Decomposition of this product under fire conditions may produce carbon oxides, phenols, sulfur oxides, sulfates, and other decomposition products.

SECTION 11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

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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
Distillates (petroleum), hydrotreated light	Dermal	Rat	LD ₅₀ = 5000 mg/kg
	Inhalation	Rat	LC ₅₀ > 5.28 mg/L after 4 hours
	Oral	Rat	LD ₅₀ > 5000 mg/kg
Distillates, petroleum, hydrotreated light paraffinic	Dermal	Rat	LD ₅₀ = 5000 mg/kg
	Inhalation	Rat	LC ₅₀ > 5.53 mg/L after 4 hours
	Oral	Rat	LD ₅₀ > 5000 mg/kg
Naphthylamine derivative	--	--	No data available
Non-hazardous components	--	--	Not expected to be hazardous.

Aspiration hazard	Test Method	Species	Result
Acrylic copolymer	--	--	No data available
Distillates (petroleum), hydrotreated light	OECD 403	Rat	LC ₅₀ > 5.53 mg/L after 4 hours
Distillates, petroleum, hydrotreated light paraffinic	OECD 403	Rat	LC ₅₀ > 5.28 mg/L after 4 hours
Naphthylamine derivative	--	--	No data available
Non-hazardous components	--	--	No data available

Carcinogenicity	Test Method	Species	Result
Acrylic copolymer	--	--	No data available
Distillates (petroleum), hydrotreated light	--	--	Not expected to be carcinogenic.
Distillates, petroleum, hydrotreated light paraffinic	OECD 451	Mouse	Non-carcinogenic
Naphthylamine derivative	--	--	No data available
Non-hazardous components	--	--	Not classified.

Eye damage / irritation	Test Method	Species	Results
Acrylic copolymer	--	--	Irritant
Distillates (petroleum), hydrotreated light	EPA OTS 798.4500	Rabbit	Not irritating
Distillates, petroleum, hydrotreated light paraffinic	OECD 405	Rabbit	Not irritating
Naphthylamine derivative	--	--	No data available
Non-hazardous components	--	--	Not classified

Germ cell mutagenicity	Test Method	Species	Results
Acrylic copolymer	--	--	No data available
Distillates (petroleum), hydrotreated light	--	<i>S. typhimurium</i>	Not mutagenic
Distillates, petroleum, hydrotreated light paraffinic	OECD 471	<i>S. typhimurium</i>	Not mutagenic
Naphthylamine derivative	--	--	No data available
Non-hazardous components	--	--	Not mutagenic

Reproductive toxicity	Test Method	Species	Results
Acrylic copolymer	--	--	No data available
Distillates (petroleum), hydrotreated light	OECD 421	Rat	NOAEL ≥ 494 mg/kg/day
Distillates, petroleum, hydrotreated light paraffinic	OECD 421	Rat	NOAEL ≥ 1000 mg/kg/day
Naphthylamine derivative	--	--	No data available
Non-hazardous components	--	--	Not classified.

Respiratory sensitization	Test Method	Species	Results
Acrylic copolymer	--	--	No data available
Distillates (petroleum), hydrotreated light	--	--	No data available
Distillates, petroleum, hydrotreated light paraffinic	--	--	No data available
Naphthylamine derivative	--	--	No data available
Non-hazardous components	--	--	Not classified.

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Skin sensitization	Test Method	Species	Results
Acrylic copolymer	--	--	No data available
Distillates (petroleum), hydrotreated light	Buehler test	Guinea pig	Not sensitizing
Distillates, petroleum, hydrotreated light paraffinic	OECD 406	Guinea pig	Not sensitizing
Naphthylamine derivative	--	--	No data available
Non-hazardous components	--	--	Not sensitizing

Skin corrosion/irritation	Test Method	Species	Results
Acrylic copolymer	--	--	Irritant
Distillates (petroleum), hydrotreated light	OECD 404	Rabbit	Not irritating
Distillates, petroleum, hydrotreated light paraffinic	--	Rabbit	Not irritating
Naphthylamine derivative	--	--	No data available
Non-hazardous components	--	--	Not expected to be hazardous.

Specific target organ toxicity – repeated exposure (STOT-RE)	Results
Acrylic copolymer	No data available
Distillates (petroleum), hydrotreated light	NOAEL = 750 mg/kg/day
Distillates, petroleum, hydrotreated light paraffinic	NOAEL < 125 mg/kg/day
Naphthylamine derivative	No data available
Non-hazardous components	Not expected to be hazardous.

Specific target organ toxicity – single exposure (STOT-SE)	Results
Acrylic copolymer	Inhalation may cause drowsiness or dizziness.
Distillates (petroleum), hydrotreated light	No data available
Distillates, petroleum, hydrotreated light paraffinic	No data available
Naphthylamine derivative	No data available
Non-hazardous components	Not classified

11.2 Other information

See SECTION 16 for toxicity references.

SECTION 12. ECOLOGICAL INFORMATION**12.1 Toxicity**

Aquatic Toxicity	Test Method	Species	Results
Acrylic copolymer	--	<i>L. macrochirus</i>	LC ₅₀ = 2.2 mg/L after 96 hours
Distillates (petroleum), hydrotreated light	OECD 201	<i>Alga</i>	EL ₅₀ = ≤ 3 mg/L
	OECD 202	<i>Daphnia sp.</i>	EL ₅₀ = 1.4 mg/L after 48 hours
	OECD 203	<i>O. mykiss</i>	NOEL = 2.0 mg/L
	OECD 211	<i>Daphnia sp.</i>	NOEL = 0.48 mg/L
	(Q)SAR	--	NOAEL = 0.098 mg/L
Distillates, petroleum, hydrotreated light paraffinic	DIN 38412:34	Microorganisms	NOEL > 1.93 mg/L
	OECD 201	<i>Alga</i>	NOEL ≥ 100 mg/L
	OECD 202	<i>Daphnia sp.</i>	NOEL > 10,000 mg/L after 48 hours
	OECD 203	<i>P. promelas</i>	NOEL ≥ 100 mg/L
	OECD 211	<i>Daphnia sp.</i>	NOEL = 10 mg/L after 21 days
	(Q)SAR	--	NOELR ≥ 1000 mg/L after 14 days
Naphthylamine derivative	--	--	No data available
Non-hazardous components	--	--	Not expected to be hazardous.

Terrestrial Toxicity

No is data available.

12.2 Persistence and degradability

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Biodegradation	Test Method	Results
Acrylic copolymer	--	No data available
Distillates (petroleum), hydrotreated light	OECD 301F	Readily biodegradable in water: 61% degradation after 28 days
Distillates, petroleum, hydrotreated light paraffinic	OECD 301F	Inherently biodegradable in water: 31% degradation after 28 days
Naphthylamine derivative	--	No data available
Non-hazardous components	--	No data available

12.3 Bioaccumulative potential

Bioconcentration Factor (BCF)

No data is available.

Partition Coefficient n-octanol / water (Log K _{ow})	Results
Acrylic copolymer	No data available
Distillates (petroleum), hydrotreated light	No data available
Distillates, petroleum, hydrotreated light paraffinic	Log K _{ow} > 5.3
Naphthylamine derivative	No data available
Non-hazardous components	No data available

12.4 Mobility in soil

Soil Mobility

No data available

12.5 Results of PBT and vPvB assessment

Chemical	Results
Acrylic copolymer	No assessment is available.
Distillates (petroleum), hydrotreated light	This substance is not PBT and vPvB.
Distillates, petroleum, hydrotreated light paraffinic	This substance is not PBT and vPvB.
Naphthylamine derivative	No assessment is available.
Non-hazardous components	These substances are not PBT and vPvB.

12.6 Other adverse effects

No further information is available

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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 U.S. EPA (40 CFR Subpart C) criteria for being toxic, corrosive, ignitable, or reactive. This material could also become hazardous waste if it is mixed with or meets a listed hazardous waste. If it is a hazardous waste, regulations in 40 CFR 262-266, 268, 270, and 279 may apply.

SECTION 14. TRANSPORTATION 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

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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

SECTION 15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Australia Inventory (AICS)**

All the ingredients are listed.

California Proposition 65

This product does not contain any chemicals known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Canadian Domestic Substances List/Non-Domestic Substances List (DSL/NDSL)

All the ingredients are listed.

China Inventory of Existing Chemical Substances (IECSC)

All the ingredients are listed.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Reportable Quantity

This product is not reportable under 40 CFR Part 302.4.

International Agency for Research on Cancer (IARC)

None of the ingredients are listed.

Japan Existing and New Chemical Substances (ENCS)

All the ingredients are listed.

Korean Existing and Evaluated Chemical Substances (KECL)

All the ingredients are listed.

Philippines Inventory of Chemicals and Chemical Substances (PICCS)

All the ingredients are listed.

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 Section 313 (40 CFR Part 372)

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

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

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Hazardous categories for this product are:

Acute = Yes Chronic = No Fire = No Pressure = No Reactive = No

United States Toxic Substances Control Act (TSCA)

All the ingredients are listed.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been conducted.

SECTION 16. OTHER INFORMATION

Safety Data Sheet Creation Date: 2 June 2015
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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 PROCESS. 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, 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.

Toxicological References"Distillates (petroleum), hydrotreated light." *Registration Dossier - ECHA*. European Chemicals Agency, [no date]. Web. 9 May 2017."Distillates (petroleum), hydrotreated light paraffinic." *Registration Dossier - ECHA*. European Chemicals Agency, [no date]. Web. 9 May 2017.*Globally Harmonized System of Classification and Labelling of Chemicals: (GHS)*. 6th ed. New York: United Nations, 2015. Print.**Definitions**

ACGIH	American Conference of Governmental Industrial Hygienists
AFS 2011:18	Swedish Work Environment Authority's provisions and general recommendations on occupational exposure limit values
Asp. Tox. 1	Aspiration hazard, category 1
Asp. Tox. 1	See <i>Aspiration hazard, category 1 definition</i> .
Aspiration hazard, category 1	Hydrocarbons with kinematic viscosity ≤ 20.5 mm ² /s are classified by OSHA as an aspiration hazard.
DIN 38412:34	German standard methods for the examination of water, waste water and sludge - Bio-assays (group L) - Part 34: Determination of the Inhibitory Effect of Waste Water on the Light Emission of <i>Photobacterium phosphoreum</i> ...
EPA	United States Environmental Protection Agency
EPA OTS 798.4500	United States Environmental Protection Agency Test Guideline 798.4800: Primary Eye Irritation
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled.
LC ₅₀	Lethal concentration that causes 50% death in test population.
NOAEL	No observed adverse effect level
NOEL	No observable effect level
NOEL	No observed effect level
LD ₅₀	Lethal dose that causes 50% death in test population.
OECD 201	OECD Guideline 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test
NIOSH	National Institute for Occupational Safety and Health
OECD 211	OECD Guideline 211: Daphnia magna Reproduction Test
OECD	Organisation for Economic Co-operation and Development
OECD 301F	OECD Guideline 301F: Manometric Respirometry Test
OECD 403	OECD Guideline 403: Acute Inhalation Toxicity

**SAFETY DATA SHEET****RADCOLUBE® 17111**

MIL-DTL-17111E(1) POWER TRANSMISSION FLUID

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OECD 404	OECD Guideline 404: Acute Dermal Irritation/Corrosion
OECD 405	OECD Guideline 405: Acute Eye Irritation/Corrosion Test
OECD 406	OECD Guideline 406: Skin Sensitization Test
OECD 421	OECD Guideline 421: Reproduction/Developmental Toxicity Screening Test
OECD 471	OECD Guideline 407: Bacterial Reverse Mutation Test
QSAR	Quantitative structure–activity relationship model
OECD 202	OECD Guideline 202: Daphnia sp. Acute Immobilisation Test
OECD 203	OECD Guideline 203: Fish, Acute Toxicity Test
PEL	Permissible exposure limit
Skin Irrit. 2	<i>See Skin irritation, Category 2 for definition.</i>
Skin Irrit. 2	<i>See Skin corrosion/irritation, Category 2 for definition.</i>
Skin irritation, Category 2	Inflammation, alopecia (limited area), hyperkeratosis, hyperplasia, and scaling that fully reverses after 14 day in animal studies.
TLV	Threshold limit value
TWA	Time-weighted average
vPvB	Very persistent and very bioaccumulative