



RADCOLUBE® AAG

SAFETY DATA SHEET

A-A-59290 HYDRAULIC FLUID, ARRESTING GEAR

Issue Date: 6 July 2017

Revision Date: 12 October 2020

Revision Number: 3.1

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

1.1 Product Identifier

Product Name: RADCOLUBE® AAG

Specifications: A-A-59290

ISO 9001:2015 Certification Number: C2018-00035

National Stock Numbers (NSN): 9150-00-224-8729 5 gallon pail
9150-00-243-1987 55 gallon drum

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

This product is ethylene glycol that has been modified with corrosion inhibitors. This product is not interchangeable with any other type or grade of hydraulic fluid.

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
Chemtrec (International): 1-703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Acute toxicity	Category 4
Aquatic toxicity, acute hazards	Category 3
Aquatic toxicity, chronic hazards	Category 3
Skin irritation	Category 3
Specific target organ toxicity – repeated exposure (STOT-RE)	Category 2: Kidneys (oral)

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.

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

2.1 Label elements

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Hazard pictograms:



Signal word:

Warning**Hazard statements**

H302:	Harmful if swallowed.
H316:	Causes mild skin irritation.
H373:	May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).
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.
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.
P331 + P315:	IF SWALLOWED: 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

WARNING: This product, while undiluted, will freeze at about 0°F. For use at lower temperatures, water must be added as required to obtain lower freezing point.

PBT and vPvB

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

NFPA Hazard ID

Health: 2
Flammability: 1
Reactivity: 0

HMIS Hazard ID

Health: 2
Flammability: 1
Reactivity: 0

SECTION 3. Composition/information on ingredients**3.1 Substances**

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Ethylene glycol

Index number: 603-027-00-1
 CAS number: 107-21-1
 EC number: 203-473-3
 REACH number: 01-2119456816-28
 Synonyms: Ethane-1,2-diol; Ethanediol

Sodium mercaptobenzothiazole

Index number: Not available
 CAS number: 2492-26-4
 EC number: 219-660-8
 REACH number: 01-2119493018-35
 Synonyms: NaMBT; Sodium benzothiazol-2-yl sulphide

2,2',2''-nitrilotriethanol

Index number: Not available
 CAS number: 102-71-6
 EC number: 203-049-8
 REACH number: 01-2119486482-31
 Synonyms: 2-[bis(2-hydroxyethyl)amino]ethan-1-ol; Triethanolamine; Tris(2-hydroxyethyl)amine

Triethanolamine phosphate

Index number: Not available
 CAS number: 10017-56-8
 EC number: 233-010-0
 REACH number: Not available
 Synonyms: TEA phosphate; Triethylammonium, salt with phosphoric acid

Water

Index number: Not available
 CAS number: 7732-18-5
 EC number: 231-791-2
 REACH number: Not available
 Synonyms: --

3.2 Mixtures

Component	CAS Number	EC Number	%Content	Classification of Labeling	M-Factor
Ethylene glycol	107-21-1	203-473-3	≥ 93.95%	Acute Tox. 4 – H302 STOT RE 2 – H373 (kidney) (oral)	0
Water	7732-18-5	231-791-2	2.50% – 3.00%	Not classified	0
Triethanolamine phosphate	10017-56-8	233-010-0	2.25% – 2.75%	Not classified	0
2,2',2''-Nitrilotriethanol	102-71-6	203-049-8	≤ 0.50%	Not classified	0
Sodium mercaptobenzothiazole (NaMBT)	2492-26-4	219-660-8	0.20% – 0.30%	Aquatic Acute 1 – H400 Aquatic Chronic 1 – H410 Met. Corr. 1 – H290 Skin Corr. 1C – H314 Skin Sens. 1 – H317	1 1 -- -- --

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

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Component	Specific Concentration limits
Ethylene glycol	See SECTION 8 for exposure limits.
Sodium mercaptobenzothiazole (NaMBT)	None established
2,2',2''-nitrioltriethanol	See SECTION 8 for exposure limits.
Triethanolamine phosphate	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

Will lead to abdominal obstruction (cramps), convulsions, dizziness, nausea and/or vomiting.

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 (CO₂), or powder.
Do not use water jet as an extinguisher because this will spread the fire.

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

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**Small Spills**

Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Large Spills

Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

This product contains ethylene glycol, which is reportable under 40 CFR Part 302.4. The reportable spill quantity is 5000 pounds (2270 kilograms)

Chemical	CAS Number / 313 Category Code	CERCLA RQ
Ethylene glycol	107-21-1	5000 pounds (2270 kgs)

6.4 Reference to other sections

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

SECTION 7. HANDLING AND STORAGE

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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.

Obliterate all markings when empty. This fluid is not interchangeable with any other type or grade of hydraulic fluid.

7.3 Specific end use(s)

The modified glycol is generally used in aircraft arresting gear systems as a hydraulic fluid.

SECTION 8.**8.1 Control parameters****Occupational exposure limits**

Exposure limits	Occupational exposure limits
2,2',2''-nitrilotriethanol	ACGIH TWA = 5 mg/m ³
Ethylene glycol	ACGIH TLV: Ceiling = 100 mg/m ³ 8 hours (aerosol)
Sodium mercaptobenzothiazole (NaMBT)	None established.
Triethanolamine phosphate	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:	Yellow liquid
Odor:	None
Odor threshold:	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Evaporation Rate:	Not determined
Explosive properties:	Not determined
Flammability (solid, gas):	Non-flammable
Lower flammability limit:	Not determined
Upper flammability limit:	Not determined
Flash point Cleveland Open Cup (ASTM D92):	Not determined
Flash point Pensky-Martens (ASTM D93):	Not determined
Initial boiling point and boiling range:	≥ 165°C (329°F)
Melting point/freezing point:	Not determined
Oxidizing properties:	Not determined
Partition coefficient (n-octanol/water), Log P _{ow} :	Not determined
pH:	7.2 – 7.8
Relative density (ASTM D1298) 15.6°C/15.6°C (60°F/60°F):	1.115 – 1.123
Solubility in water:	Complete solubility
Vapor density:	Not determined
Vapor pressure:	Not determined
Viscosity (ASTM D445):	9 – 10 mm ² /s at 37.8°C (100°F)

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 productsDecomposition of this product under fire conditions may produce amines, carbon oxides, nitrogen oxides (NO_x), phenols, phosphates, and other decomposition products.

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

Acute toxicity	Method	Species	Result
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2,2',2''-nitrilotriethanol	Dermal Inhalation Oral	Rabbit Rat Rat	LD ₅₀ > 2000 mg/kg Not data available LD ₅₀ = 6400 mg/kg bodyweight
Ethylene glycol	Dermal Inhalation Oral	Rat Rat Rat	LD ₅₀ > 3500 mg/kg bodyweight LC ₅₀ > 2.5 mg/L air LD ₅₀ = 7712 mg/kg bodyweight
Sodium mercaptobenzothiazole (NaMBT)	Dermal Inhalation Oral	Rabbit Rat Rat	LD ₅₀ > 7940 mg/kg bodyweight LC ₅₀ > 8.2 mg/L air LD ₅₀ = 2100 mg/kg bodyweight
Triethanolamine phosphate	--	--	No data available

Aspiration hazard	Test Method	Species	Result
2,2',2''-nitrilotriethanol	--	--	No data available
Ethylene glycol	<i>Literature</i>	Rat	LC ₅₀ > 2.5 mg/L air
Sodium mercaptobenzothiazole (NaMBT)	<i>Literature</i>	Rat	LC ₅₀ > 8.2 mg/L air
Triethanolamine phosphate	--	--	No data available

Carcinogenicity	Test Method	Species	Result
2,2',2''-nitrilotriethanol	<i>Literature</i>	Rat	NOAEL = 1333 mg/kg bodyweight/day
Ethylene glycol	<i>Literature</i>	Rat	NOAEL = 1000 mg/kg diet
Sodium mercaptobenzothiazole (NaMBT)	<i>Read across</i>	Rat	Non-carcinogenic
Triethanolamine phosphate	--	--	No data available

Eye damage / irritation	Test Method	Species	Results
2,2',2''-nitrilotriethanol	OECD 405	Rabbit	Not irritating
Ethylene glycol	<i>Read across</i>	Rabbit	Not irritating
Sodium mercaptobenzothiazole (NaMBT)	<i>Literature</i>	Rabbit	Corrosive
Triethanolamine phosphate	--	--	No data available

Germ cell mutagenicity	Test Method	Species	Results
2,2',2''-nitrilotriethanol	<i>Literature</i>	Chinese hamster Ovary	Not mutagenic
Ethylene glycol	OECD 471	<i>S. typhimurium</i>	Not mutagenic
Sodium mercaptobenzothiazole (NaMBT)	<i>Literature</i>	Mouse	Not mutagenic
Triethanolamine phosphate	--	--	No data available

Reproductive toxicity	Test Method	Species	Results
2,2',2''-nitrilotriethanol	OECD 421	Rat	NOAEL > 1000 mg/kg bodyweight/day
Ethylene glycol	<i>Literature</i>	Rat	NOAEL > 1000 mg/kg bodyweight/day
Sodium mercaptobenzothiazole (NaMBT)	OECD 416	Rat	NOAEL = 15,000 ppm
Triethanolamine phosphate	--	--	No data available

Respiratory sensitization

No data available

Skin sensitization	Test Method	Species	Results
2,2',2''-nitrilotriethanol	OECD 406	Guinea pig	Not sensitizing
Ethylene glycol	<i>Literature</i>	Guinea pig	Not sensitizing
Sodium mercaptobenzothiazole (NaMBT)	<i>Read across</i>	Guinea pig	Not sensitizing
Triethanolamine phosphate	--	--	No data available

Skin corrosion/irritation	Test Method	Species	Results
2,2',2''-nitrilotriethanol	OECD 404	Rabbit	Not irritating
Ethylene glycol	<i>Read across</i>	Rabbit	Not irritating
Sodium mercaptobenzothiazole (NaMBT)	<i>Literature</i>	Rabbit	Corrosive
Triethanolamine phosphate	--	--	No data available

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Specific target organ toxicity – repeated exposure (STOT-RE)	Test Method	Species (route)	Results
2,2',2''-nitrioltriethanol	OECD 411 OECD 412 OECD 408	Rat (dermal) Rat (inhalation) Rat (oral)	NOAEL = 125 – 500 mg/kg bw/day NOAEC = 20 – 50 mg/m ³ air NOAEL = 1000 mg/kg bw/day
Ethylene glycol	OECD 452	Rat (oral)	Target organs = kidney
Sodium mercaptobenzothiazole (NaMBT)	OECD 416	Rat (oral)	LOAEL = 2500 ppm
Triethanolamine phosphate	--	--	No data available

Specific target organ toxicity – single exposure (STOT-SE)

No data available

11.2 Other information

See SECTION 16 for toxicity references.

SECTION 12. ECOLOGICAL INFORMATION**12.1 Toxicity**

Aquatic Toxicity	Test Method	Species	Results
2,2',2''-nitrioltriethanol	Literature Literature Literature Literature Literature OECD 209 OECD 211	<i>C. dubia</i> <i>Chlorococcales</i> <i>D. subspicatus</i> <i>P. promelas</i> <i>P. tricornutum</i> <i>microorganisms</i> <i>D. magna</i>	LC ₅₀ = 609.88 mg/L NOEC > 1000 mg/L EC ₅₀ = 216 mg/L LC ₅₀ = 11,800 mg/L EC ₅₀ = 204 mg/L EC ₅₀ = 1000 mg/L NOEC = 16 mg/L
Ethylene glycol	Literature QSAR Literature	<i>P. promelas</i> <i>P. promelas</i> <i>Daphnia sp.</i>	LC ₅₀ = 72,860 mg/L after 96 hours NOEC = 15,380 mg/L EC ₅₀ = 13,900 to 57,600 mg/L after 48 hours
Sodium mercaptobenzothiazole (NaMBT)	OECD 201 OECD 202 OECD 211 Read across Read across	<i>S. capricornutum</i> <i>Daphnia sp.</i> <i>Daphnia magna</i> Rainbow trout Rainbow trout	NOEC = 0.066 mg/L after 72 hours EC ₅₀ = 0.71 mg/L after 48 hours NOEC = 0.08 mg/L LC ₅₀ = 0.73 mg/L after 96 hours NOEC = 0.041 mg/L
Triethanolamine phosphate	--	--	No data available

Terrestrial Toxicity	Test Method	Species	Results
2,2',2''-nitrioltriethanol	--	--	No data available
Ethylene glycol	--	--	No data available
Sodium mercaptobenzothiazole (NaMBT)	Literature	<i>C. virginianus</i>	LC ₅₀ > 3387 ppm
Triethanolamine phosphate	--	--	No data available

12.2 Persistence and degradability

Biodegradation	Test Method	Results
2,2',2''-nitrioltriethanol	OECD 306 Literature Literature	Biodegradation = 19.6%; not readily biodegradable in marine systems Freshwater (half-life) = 0.01 – 0.51 days; readily biodegradable in water Soil (half-life) = 1.8 days; readily biodegradable in soil
Ethylene glycol	OECD 301A	Biodegradation > 90% after 10 days: readily biodegradable
Sodium mercaptobenzothiazole (NaMBT)	OECD 301C	Biodegradation = 2% after 35 days: not readily biodegradable
Triethanolamine phosphate	--	No data available

12.3 Bioaccumulative potential

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Bioconcentration Factor (BCF)	Results
2,2',2''-nitrioltriethanol	BCF (aquatic species) = 3.9 L/kg ww
Ethylene glycol	No data available
Sodium mercaptobenzothiazole (NaMBT)	BCF (<i>Cyprinus carpio</i>) < 0.8
Triethanolamine phosphate	No data available

Partition Coefficient n-octanol / water (Log K _{ow})	Results
2,2',2''-nitrioltriethanol	-2.3 at 25°C and pH 7.1
Ethylene glycol	-1.36 at 25°C
Sodium mercaptobenzothiazole (NaMBT)	2.42 at pH 7
Triethanolamine phosphate	No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Chemical	Results
2,2',2''-nitrioltriethanol	This substance is not PVT and vPvB.
Ethylene glycol	This substance is not PVT and vPvB.
Sodium mercaptobenzothiazole (NaMBT)	This substance is not PVT and vPvB.
Triethanolamine phosphate	Chemical assessment is not available.

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 for containers under 5000-pounds:	Not regulated by US DOT in quantities under 5000 pounds (2270 kilograms) in any one inner package (49 CFR Appendix A to § 172.101).
UN Number:	3082
UN Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL)
Transport hazard class:	9
Packing group:	III
Special provisions:	8, 146, 335, IB3, T4, TP1, TP29
Packing exceptions:	155
Packaging non bulk:	203
Packaging bulk:	241
Reportable Quantity for Ethylene Glycol:	5000 pounds (2270 kilograms)

Canadian Transportation of Dangerous Goods Shipping Name (TDG)	
UN Number:	UN3082
UN Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL)
Transport hazard class:	9
Packing group:	III

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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)

UN Number: 3082
UN Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL)
Transport hazard class: 9
Packing group: III

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

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.

UN Number: UN3082
UN Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL)
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. (ETHYLENE GLYCOL)
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 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)

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UN Number: UN3082
 UN Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL)
 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)

UN Number: 3082
 UN Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL)
 Transport hazard class: 9
 Packing group: III

Not regulated (5-liter or less inner packaging): **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. (ETHYLENE GLYCOL)
 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.

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

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

This product contains ethylene glycol, which is reportable under 40 CFR Part 302.4. The reportable spill quantity is 5000 pounds (2270 kilograms)

Chemical	CAS/313 Category Code	CERCLA RQ
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**SAFETY DATA SHEET****RADCOLUBE® AAG**

A-A-59290 HYDRAULIC FLUID, ARRESTING GEAR

Issue Date: 6 July 2017

Revision Date: 12 October 2020

Revision: 3.1

Ethylene glycol

107-21-1

5000 pounds (2270 kgs)

International Agency for Research on Cancer (IARC)

None of 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)

Hazardous categories for this product are:

Acute = Yes

Chronic = Yes

Fire = No

Pressure = No

Reactive = No

United States Toxic Substances Control Act (TSCA)

All the ingredients are listed.

Right to Know Components (United States)

State	Component	CAS Number
New Jersey	Ethylene glycol	107-21-1
Massachusetts	Ethylene glycol	107-21-1
Pennsylvania	Ethylene glycol	107-21-1

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been conducted.

SECTION 16.

Safety Data Sheet Creation Date: 6 July 2017

Safety Data Sheet Revision Date: 12 October 2020

Revision Number: 3.1

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"2,2',2"-nitrioltriethanol." *Registration Dossier - ECHA*. European Chemicals Agency, [no date]. Web. 4 February 2020."Ethane-1,2-diol." *Registration Dossier - ECHA*. European Chemicals Agency, [no date]. Web. 6 July 2017."Sodium benzothiazol-2-yl sulphide." *Registration Dossier - ECHA*. European Chemicals Agency, [no date]. Web. 6 July 2017.**Definitions**

ACGIH	American Conference of Governmental Industrial Hygienists
Acute Tox. 4	Acute toxicity, category 4
Aquatic Acute 1	Aquatic hazard, acute toxicity, category 1
Aquatic Chronic 1	Aquatic hazard, chronic toxicity, category 1

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H290	May be corrosive to metals.
H373	May cause damage to organs through prolonged or repeated exposure
LC ₅₀	Lethal concentration that causes 50% death in test population.
LD ₅₀	Lethal dose that causes 50% death in test population.
NOAEL	No observed adverse effect level
OECD	Organisation for Economic Co-operation and Development
OECD 201	OECD Guideline 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test
OECD 202	OECD Guideline 202: Daphnia sp. Acute Immobilisation Test
OECD 211	OECD Guideline 211: Daphnia magna Reproduction Test
OECD 301A	OECD Guideline 301A: Ready Biodegradability - Dissolved Organic Carbon (DOC)
OECD 301C	OECD Guideline 301C: Ready Biodegradability
OECD 416	OECD Guideline 416: Two-Generation Reproduction Toxicity
OECD 452	OECD Guideline 452: Chronic Toxicity Studies
OECD 471	OECD Guideline 471: Bacterial Reverse Mutation Test
PBT	Persistence Bioaccumulation and Toxicity
ppm	Parts per million
QSAR	Quantitative structure–activity relationship model
STOT RE 2	Specific target organ toxicity – repeated exposure, category 2
TLV	Threshold limit value
vPvB	Very persistent and very bioaccumulative