RADCOLUBE® AAG

Safety Data Sheet

A-A-59290 Hydraulic Fluid, Arresting Gear

Issue date: 7/6/2017 Revision date: 8/19/2025 Supersedes: 1/18/2024 Version: 8.0

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)

SECTION 1: Identification

1.1. Identification

Trade name	RADCOLUBE® AAG
Radco Product Code:	AAG (17272-A)
Specification:	A-A-59290 Hydraulic Fluid, Arresting Gear
National Stock Number(s) (NSN):	9150-00-224-8729 5 Gallon Pail
	9150-00-243-1987 55 Gallon Drum

1.2. Recommended use and restrictions on use

Use of the substance/mixture:	This product contains ethylene glycol that has been modified with corrosion inhibitors. The modified glycol is generally used in aircraft arresting gear systems as a hydraulic fluid and is not interchangeable with any other type of grade of hydraulic fluid.
Use of the substance/mixture:	Hydraulic fluids and additives
Recommended use:	Hydraulic fluids
Restrictions on use:	Hydraulic fluids

1.3. Supplier

Manufacturer

Radco Industries L.L.C.
CAGE Code 6ZS16
700 Kingsland Drive
Batavia, Illinois 60510
United States
T (630) 232-7966
www.radcoind.com

1.4. Emergency telephone number

Emergency number:	For Chemical Emergency Call CHEMTREC 24hr/day 7days/week Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Acute toxicity (oral), Category 4	H302 Harmful if swallowed.
Specific target organ toxicity — Repeated exposure, Category 2	H373 May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US):

Signal word (GHS US): Warning

Hazard statements (GHS US):
H302 - Harmful if swallowed
H373 - May cause damage to organs (kidneys) through prolonged or repeated exposure (oral)

Precautionary statements (GHS US):
P260 - Do not breathe fume, mist, spray, vapors.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P301+P312 - If swallowed: Call a doctor if you feel unwell.
P501 - Dispose of contents and container to an approved waste disposal plant.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	CAS-No.	%	GHS US classification
ethanediol, ethylene glycol	107-21-1	≥ 93.95	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
Triethanolamine phosphate	10017-56-8	2.25 – 2.75	Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319
Triethanolamine	102-71-6	≤ 0.5	Not classified

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general: Call a poison center/doctor/physician if you feel unwell.

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.

First-aid measures after skin contact: Wash skin with plenty of water.

First-aid measures after eye contact: Rinse eyes with water as a precaution.

First-aid measures after ingestion: Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation:	Harmful if inhaled.
Symptoms/effects after skin contact:	None under normal conditions.
Symptoms/effects after eye contact:	None under normal conditions.
Symptoms/effects after ingestion:	Harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media:	Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard:	No fire hazard.
Explosion hazard:	No direct explosion hazard.
Hazardous decomposition products in case of fire:	Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions:	Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures:	Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

6.1.1. For non-emergency personnel

Protective equipment:	Wear recommended personal protective equipment.
Emergency procedures:	Ventilate spillage area. Do not breathe dust/fume/gas/mist/vapors/spray.

6.1.2. For emergency responders

Protective equipment:	Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures:	Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment:	Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.
Methods for cleaning up:	Take up liquid spill into absorbent material.
Other information:	Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed:	Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling:	Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area.
Hygiene measures:	Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures:	Keep in a cool, well-ventilated place away from heat.
Storage conditions:	Keep cool. Protect from sunlight.
Packaging materials:	Store always product in container of same material as original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

RADCOLUBE® AAG	
No additional information available	
USA - ACGIH - Occupational Exposure Limits	
Local name	Ethylene glycol
ACGIH® TLV® TWA	25 ppm (V - Vapor fraction)
ACGIH® TLV® STEL	10 mg/m³ (I - Inhalable particulate matter, H - Aerosol only)
	50 ppm (V - Vapor fraction)
Remark (ACGIH)	TLV® Basis: URT irr. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2025

ethanediol, ethylene glycol (107-21-1)	
No additional information available	
USA - ACGIH - Occupational Exposure Limits	
Local name	Ethylene glycol
ACGIH® TLV® TWA	25 ppm (Vapor fraction)

ACGIH® TLV® STEL	10 mg/m³ (Inhalable fraction, Aerosol only)
	50 ppm (Vapor fraction)
Remark (ACGIH)	TLV® Basis: URT irr. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2025

Triethanolamine phosphate (10017-56-8)	
No additional information available	
USA - ACGIH - Occupational Exposure Limits	
Local name	Triethanolamine
ACGIH® TLV® TWA	5 mg/m³
Remark (ACGIH)	TLV® Basis: Eye & skin irr
Regulatory reference	ACGIH 2025

Triethanolamine (102-71-6)	
No additional information available	
USA - ACGIH - Occupational Exposure Limits	
Local name	Triethanolamine
ACGIH® TLV® TWA	5 mg/m³
Remark (ACGIH)	TLV® Basis: Eye & skin irr
Regulatory reference	ACGIH 2025

8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station.
Environmental exposure controls: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Wear recommended personal protective equipment.

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
[In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Appearance:	Liquid.
Color:	Yellow
Odor:	mild
Odor threshold:	No data available
pH:	7.2 – 7.8
pH solution:	50 (7.2 – 7.8) % (Aqueous solution)
Melting point:	Not applicable
Freezing point:	≤ -17.8 °C
Boiling point:	≥ 165 °C
Flash point:	No data available
Relative evaporation rate (butyl acetate=1):	No data available
Flammability:	Not applicable.
Vapor pressure:	No data available
Relative vapor density at 20°C:	No data available
Relative density:	1.123 at 15.5°C/15.5°C (60°F/60°F)
Solubility:	Material highly soluble in water.
Partition coefficient n-octanol/water (Log Pow):	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity, kinematic:	9 – 10 mm^2/s at 37.7°C (100°F)
Viscosity, dynamic:	No data available
Explosion limits:	No data available
Explosive properties:	No data available

Oxidizing properties:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral):	Harmful if swallowed.
Acute toxicity (dermal):	Not classified
Acute toxicity (inhalation):	Not classified
Skin corrosion/irritation:	Not classified pH: 7.2 – 7.8
Carcinogenicity:	Not classified
Aspiration hazard:	Not classified
Viscosity, kinematic:	9 – 10 mm^2/s at 37.7°C (100°F)
Symptoms/effects after inhalation:	Harmful if inhaled.
Symptoms/effects after skin contact:	None under normal conditions.
Symptoms/effects after eye contact:	None under normal conditions.
Symptoms/effects after ingestion:	Harmful if swallowed.
STOT-single exposure:	Not classified
STOT-repeated exposure:	May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).
Reproductive toxicity:	Not classified

RADCOLUBE® AAG	
ATE US (oral):	530.786 mg/kg body weight

ethanediol, ethylene glycol (107-21-1)	
LD50 oral rat:	7712 mg/kg Source: European Chemicals Agency, http://echa.europa.eu/
LC50 Inhalation - Rat:	> 2.5 mg/l (6 Hours, Experimental data)
ATE US (oral):	500 mg/kg body weight

Triethanolamine phosphate (10017-56-8)	
ATE US (gases):	4500 ppmV/4h
ATE US (vapors):	11 mg/l/4h
ATE US (dust, mist):	1.5 mg/l/4h

Triethanolamine (102-71-6)	
LD50 oral rat:	6400 mg/kg body weight (OECD 401 method)
LD50 dermal rat:	> 5000 mg/kg
LD50 dermal rabbit:	> 2000 mg/kg body weight (OECD 402 method)
ATE US (oral):	6400 mg/kg body weight

ethanediol, ethylene glycol (107-21-1)	
Skin corrosion/irritation, rabbit	No skin irritation - 20 Hours (Source: European Chemicals Agency, http://echa.europa.eu/)
Serious eye damage/irritation:	Not classified

Triethanolamine phosphate (10017-56-8)	
Serious eye damage/irritation:	Not classified

Triethanolamine (102-71-6)	
Serious eye damage/irritation:	Not classified

ethanediol, ethylene glycol (107-21-1)	
Serious eye damage/irritation, rabbit	No eye irritation (Source: European Chemicals Agency, http://echa.europa.eu/)
Respiratory or skin sensitization:	Not classified

Triethanolamine phosphate (10017-56-8)	
Respiratory or skin sensitization:	Not classified

Triethanolamine (102-71-6)	
Respiratory or skin sensitization:	Not classified

ethanediol, ethylene glycol (107-21-1)	
Respiratory or skin sensitization, Guinea pig	Negative ((OECD 406 method), Literature data)

Germ cell mutagenicity:	Not classified

Triethanolamine phosphate (10017-56-8)	
Germ cell mutagenicity:	Not classified

Triethanolamine (102-71-6)	
Germ cell mutagenicity:	Not classified

ethanediol, ethylene glycol (107-21-1)	
Germ cell mutagenicity, AMES test, Escherichia coli/Salmonella typhimurium	Mutagenicity tests are negative ((OECD 471 method), Source: European Chemicals Agency, http://echa.europa.eu/)

ethanediol, ethylene glycol (107-21-1)	
NOAEL (chronic,oral,animal/male,2 years):	6250 – 12500 mg/kg body weight Source: European Chemicals Agency, http://echa.europa.eu/
NOAEL (chronic,oral,animal/female,2 years):	12500 – 50000 mg/kg body weight Source: European Chemicals Agency, http://echa.europa.eu/
IARC group:	Not classified

Triethanolamine (102-71-6)	
NOAEL (chronic,oral,animal/male,2 years):	63 mg/kg body weight (OECD 451 method)
IARC group:	3 - Not classifiable

ethanediol, ethylene glycol (107-21-1)	
NOAEL (animal/male, F0/P):	1000 mg/kg bodyweight/day Source: European Chemicals Agency, http://echa.europa.eu/
NOAEL (animal/female, F0/P):	1000 mg/kg bodyweight/day Source: European Chemicals Agency, http://echa.europa.eu/
NOAEL (animal/male, F1):	1000 mg/kg bodyweight/day Source: European Chemicals Agency, http://echa.europa.eu/
NOAEL (animal/female, F1):	1000 mg/kg bodyweight/day Source: European Chemicals Agency, http://echa.europa.eu/

ethanediol, ethylene glycol (107-21-1)	
NOAEL (oral,rat,90 days):	500 mg/kg bodyweight/day (OECD 408 method)
STOT-repeated exposure:	May cause damage to organs through prolonged or repeated exposure.

Triethanolamine (102-71-6)	
NOAEL (oral,rat,90 days):	1000 mg/kg body weight (OECD 408 method)

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

ethanediol, ethylene glycol (107-21-1)	
LC50 - Fish [1]:	72860 mg/l Species: Pimephales promelas
EC50 - Crustacea [1]:	> 100 mg/l Species: Daphnia magna (Water flea)
NOEC (chronic):	≥ 1000 mg/l Species: Americamysis bahia (23 days)

Triethanolamine (102-71-6)	
LC50 - Fish [1]:	11800 mg/l Species: Pimephales promelas
EC50 - Crustacea [1]:	609.88 mg/l Species: Ceriodaphnia dubia
ErC50 algae:	169 mg/l

12.2. Persistence and degradability

ethanediol, ethylene glycol (107-21-1)	
Persistence and degradability:	Readily biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD):	0.47 g O_2/g substance
Chemical oxygen demand (COD):	1.24 g O_2/g substance
ThOD:	1.29 g O_2/g substance

Triethanolamine (102-71-6)	
Persistence and degradability:	Readily biodegradable in water.
Biochemical oxygen demand (BOD):	0.02 g O_2/g substance
Chemical oxygen demand (COD):	1.5 g O_2/g substance
ThOD:	2.04 g O_2/g substance
BOD (% of ThOD):	0.02

12.3. Bioaccumulative potential

ethanediol, ethylene glycol (107-21-1)	
Partition coefficient n-octanol/water (Log Pow):	-1.36 (Experimental data)
Bioaccumulative potential:	Not bioaccumulative.

Triethanolamine (102-71-6)	
BCF - Fish [1]:	< 3.9 Species: Cyprinus carpio (Common carp), Pure substance

Triethanolamine (102-71-6)	
Partition coefficient n-octanol/water (Log Pow):	-2.53 – -1.32
Bioaccumulative potential:	Not bioaccumulative.

12.4. Mobility in soil

ethanediol, ethylene glycol (107-21-1)	
Mobility in soil:	0.2 Source: HSDB (Hazardous Substances Data Bank)
Surface tension:	48.4 mN/m at 20°C
Organic Carbon Normalized Adsorption Coefficient (Log Koc):	0 (Source: PCKOCWIN v2.0, QSAR)
Ecology - soil:	Highly mobile in soil.

Triethanolamine (102-71-6)	
Ecology - soil:	No (test) data on mobility of the component(s) available.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation: Disposal must be done according to official regulations.

Waste treatment methods: Dispose of contents/container in accordance with licensed collector's sorting instructions.

Sewage disposal recommendations: Disposal must be done according to official regulations.

Product/Packaging disposal recommendations: Disposal must be done according to official regulations.

Additional information: Do not re-use empty containers.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA / ICAO / ADN / RID / ADG

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT): Not applicable

Proper Shipping Name (TDG): Not applicable

Proper Shipping Name (IMDG): Not applicable

Proper Shipping Name (IATA): Not applicable

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT): Not applicable

TDG

Transport hazard class(es) (TDG): Not applicable

IMDG

Transport hazard class(es) (IMDG): Not applicable

IATA

Transport hazard class(es) (IATA): Not applicable

14.4. Packing group

Packing group (DOT):	Not applicable
Packing group (TDG):	Not applicable
Packing group (IMDG):	Not applicable
Packing group (IATA):	Not applicable

14.5. Environmental hazards

Other information: No supplementary information available.

14.6. Special precautions for user

DOT

No data available

TDG

No data available

IMDG

No data available

IATA

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

ethylene glycol	CAS-No. 107-21-1	≥ 93.95%

ethanediol, ethylene glycol (107-21-1)	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ:	5000 lb

15.2. International regulations

CANADA

ethanediol, ethylene glycol (107-21-1)
Listed on the Canadian DSL (Domestic Substances List)

Triethanolamine phosphate (10017-56-8)
Listed on the Canadian DSL (Domestic Substances List)

Triethanolamine (102-71-6)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

ethanediol, ethylene glycol (107-21-1)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

Triethanolamine (102-71-6)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

⚠ **WARNING:** This product can expose you to ethanediol, ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

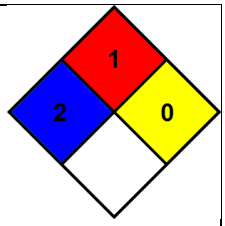
SECTION 16: Other information

according to 29 CFR § 1910.1200, Hazard Communication Standard (HCS)
Revision date: 08/19/2025

Full text of hazard classes and H-statements	
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled

Full text of hazard classes and H-statements	
H373	May cause damage to organs through prolonged or repeated exposure

NFPA health hazard	2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard	1 - Materials that must be preheated before ignition can occur.
NFPA reactivity	0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating	
Health	2 Moderate Hazard - Temporary or minor injury may occur
Flammability	1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Physical	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

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.