



INTERCOOL R-4441

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 01/30/2015 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product form : Mixture
Trade name : INTERCOOL R-4441
CAS No : Mixture
Product code : 80970

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

Use of the substance/mixture : Heat Transfer Fluid

1.3 Details of the supplier of the safety data sheet

Interstate Chemical Company, Inc.
2797 Freedland Road
Hermitage, PA 16148-0210 - United States
T 800-422-2436 - F (724) 509-1015
jwarren@interstatechemical.com - www.interstatechemical.com

1.4 Emergency telephone number

Emergency number : For 24-Hour Emergency Information Call Chemtrec: +1 (800) 424-9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (GHS-US)
Acute Tox. 4 (Oral) H302
Full text of H-phrases: see section 16

2.2 Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H302 - Harmful if swallowed
Precautionary statements (GHS-US) : P264 - Wash ... thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P301+P312 - If swallowed: Call a poison center/doctor/... if you feel unwell
P330 - Rinse mouth
P501 - Dispose of contents/container to a hazardous or special waste collection point, a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste, an approved waste disposal plant, an authorized waste collection point, an industrial incineration plant, hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3 Other hazards

No additional information available

2.4 Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable

3.2 Mixture

INTERCOOL R-4441

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	Classification (GHS-US)
ethylene glycol	(CAS No) 107-21-1	60 - 80	Acute Tox. 4 (Oral), H302
disodium tetraborate, pentahydrate	(CAS No) 12179-04-3	1 - 20	Not classified
sodium 4(or 5)-methyl-1H-benzotriazole	(CAS No) 64665-57-2	0.49 - 5.1	Acute Tox. 4 (Oral), H302
DEIONIZED WATER	(CAS No) 7732-18-5	0.49 - 5.1	Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

INTERCOOL R-441

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Incompatible products : Strong bases. Strong acids.
Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

INTERCOOL R-441 (Mixture)		
ACGIH	Not applicable	
OSHA	Not applicable	
ethylene glycol (107-21-1)		
ACGIH	ACGIH Ceiling (mg/m ³)	100 mg/m ³
ACGIH	Remark (ACGIH)	URT & eye irr
OSHA	Not applicable	
disodium tetraborate, pentahydrate (12179-04-3)		
ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
ACGIH	ACGIH STEL (mg/m ³)	6 mg/m ³
OSHA	Not applicable	
sodium 4(or 5)-methyl-1H-benzotriazole (84866-57-2)		
ACGIH	Not applicable	
OSHA	Not applicable	
DEIONIZED WATER (7732-18-5)		
ACGIH	Not applicable	
OSHA	Not applicable	

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : Wear appropriate mask.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Clear, colorless liquid.

Color : Colorless

Odor : No data available

Odor threshold : No data available

pH : 8 - 9.5

Relative evaporation rate (butyl acetate=1) : < 1

Melting point : < -100 °F

Freezing point : < -100 °F Freezing Point Chart

Boiling point : 240 °F Boiling Point Chart

Flash point : Not Flammable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : < 15 mm Hg at room temperature

Relative vapor density at 20 °C : >= 2 (Air=1)

Relative density : 1.092 (H₂O=1)

INTERCOOL R-4441

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Specific gravity / density	: 9.104 lb/gal at room temperature
Solubility	: Soluble in water. Water:
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: 3.2 - 15.3 vol %

9.2. Other information

VOC content : 50 % Volatile portion is water

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

INTERCOOL R-4441 (V) Mixture	
ATE US (oral)	658.455 mg/kg body weight
ethylene glycol (107-21-1)	
LD50 oral rat	> 5000 mg/kg (Rat; Literature study)
ATE US (oral)	500.000 mg/kg body weight
disodium tetraborate, pentahydrate (12179-04-3)	
LD50 oral rat	> 2000 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; >2500 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit; Experimental value; Other)
sodium 4(or 6)-methyl-1H-benzotriazolide (64665-57-2)	
LD50 oral rat	640 - 1980 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)
ATE US (oral)	640.000 mg/kg body weight

Skin corrosion/irritation	: Not classified pH: 8 - 9.5
Serious eye damage/irritation	: Not classified pH: 8 - 9.5
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

INTERCOOL R-4441

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Reproductive toxicity	:	Not classified
Specific target organ toxicity (single exposure)	:	Not classified
Specific target organ toxicity (repeated exposure)	:	Not classified
Aspiration hazard	:	Not classified
Potential Adverse human health effects and symptoms	:	Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

ethylene glycol (107-21-1)	
LC50 fish 1	53000 mg/l (96 h; Pimephales promelas; Static system)
EC50 Daphnia 1	> 10000 mg/l (24 h; Daphnia magna)
LC50 fish 2	40761 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Static system)
Threshold limit algae 1	> 10000 mg/l (168 h; Scenedesmus quadricauda)
Threshold limit algae 2	2000 mg/l (192 h; Microcystis aeruginosa)
disodium tetraborate, pentahydrate (12179-04-3)	
LC50 fish 1	100 - 1000 mg/l (96 h; Pisces; Decahydrate)
LC50 other aquatic organisms 1	100 - 100 mg/l (96 h)
EC50 Daphnia 1	340 mg/l (24 h; Daphnia magna; Anhydrous form)
LC50 fish 2	1900 mg/l (Pimephales promelas)
TLM fish 1	8200 ppm (48 h; Gambusia affinis; Anhydrous form)
Threshold limit other aquatic organisms 1	100 - 100,96 h; Protozoa; Anhydrous form
Threshold limit other aquatic organisms 2	1 mg/l (72 h)
Threshold limit algae 1	47 mg/l (96 h; Scenedesmus subspicatus; Anhydrous form)
Threshold limit algae 2	0.58 mg/l (Scenedesmus quadricauda; Anhydrous form)
sodium 4(or 5)-methyl-1H-benzotriazolide (64665-57-2)	
LC50 fish 1	25 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 1	280 mg/l (48 h; Daphnia magna)
EC50 other aquatic organisms 1	32 mg/l (96 h; Selenastrum capricornutum; Biomass)
LC50 fish 2	122 mg/l (96 h; Brachydanio rerio)
Threshold limit algae 1	26.2 mg/l (72 h; Selenastrum capricornutum; Growth)

12.2. Persistence and degradability

INTERCOOL R-4441 (Mixture)	
Persistence and degradability	Not established.
ethylene glycol (107-21-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil.
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
BOD (% of ThOD)	0.36 % ThOD
disodium tetraborate, pentahydrate (12179-04-3)	
Persistence and degradability	Biodegradability: not applicable. Biodegradability in soil: not applicable. Adsorbs into the soil.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
sodium 4(or 5)-methyl-1H-benzotriazolide (64665-57-2)	
Persistence and degradability	Readily biodegradable in water.

12.3. Bioaccumulative potential

INTERCOOL R-4441 (Mixture)	
Bioaccumulative potential	Not established.

INTERCOOL R-4441

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ethylene glycol (107-21-1)	
BCF fish 1	10 (72 h; <i>Leuciscus idus</i>)
BCF other aquatic organisms 1	0.21 - 0.6 (<i>Procambarus</i> sp.; Chronic)
BCF other aquatic organisms 2	190 (24 h; Algae)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
disodium tetraborate, pentahydrate (12179-04-3)	
Bioaccumulative potential	Not bioaccumulative.
sodium 4(or 5)-methyl-1H-benzotriazolide (64665-57-2)	
Log Pow	0.658
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4: Mobility in soil

ethylene glycol (107-21-1)	
Surface tension	0.048 N/m (20 °C)
disodium tetraborate, pentahydrate (12179-04-3)	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

12.5: Other adverse effects

- Effect on ozone layer :
Effect on the global warming : No known ecological damage caused by this product.
Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1: Waste treatment methods

- Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

- Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s. (Ethylene Glycol), 9, III
UN-No.(DOT) : UN3082
Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s.
Department of Transportation (DOT) Hazard Classes : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



- DOT Symbols : G - Identifies PSN requiring a technical name
Packing group (DOT) : III - Minor Danger

INTERCOOL R-4441

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Special Provisions (49 CFR 172.102)	: 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies. 146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination. 173 - An appropriate generic entry may be used for this material. 335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s." UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging. IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling. TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 155
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: No limit
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Additional information

Emergency Response Guide (ERG) Number	: 171
Other information	: Only regulated by DOT if product exceeds Reportable Quantity under CERCLA. The reportable quantity can be found in Section 15 of this SDS.

ADR

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1 US Federal regulations

ethylene glycol (107-21-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb
Disodium tetraborate anhydrous (12179-04-3)	
Not listed on the United States TSCA (Toxic Substances Control Act) inventory	
sodium 4(or 5)-methyl-1H-benzotriazole (64665-57-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

INTERCOOL R-4441

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

15.2 International regulations

CANADA

EU-Regulations

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

No additional information available

15.3 US State regulations

ethylene glycol (107-21-1)

U.S. - Massachusetts - Right To Know List

SECTION 16: Other information

Abbreviations and acronyms : European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. European Agreement concerning the International Carriage of Dangerous Goods by Road. Acute Toxicity Estimate. Bioconcentration factor. Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008. Derived Minimal Effect level. Derived-No Effect Level. Dangerous Preparations Directive 1999/45/EC. Dangerous Substances Directive 67/548/EEC. Median effective concentration. International Agency for Research on Cancer. International Air Transport Association. International Maritime Dangerous Goods. Median lethal concentration. Median lethal dose. Lowest Observed Adverse Effect Level. No-Observed Adverse Effect Concentration. No-Observed Adverse Effect Level. No-Observed Effect Concentration. Organisation for Economic Co-operation and Development. Persistent Bioaccumulative Toxic. Predicted No-Effect Concentration. Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006. Regulations concerning the International Carriage of Dangerous Goods by Rai. Safety Data Sheet. Sewage treatment plant. Median Tolerance Limit. Very Persistent and Very Bioaccumulative.

Other information : None.

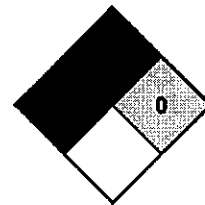
Full text of H-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
H302	Harmful if swallowed

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 1 Slight Hazard

Physical : 0 Minimal Hazard

Personal Protection : D

SDS US (GHS HazCom 2012)

Instate Chemical Company, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.