

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

### 1.1. Product identifier

Product form : Mixture  
Product name : DefendAL Heavy Duty Nitrite-Free Extended Life Antifreeze/Coolant Concentrate and 50/50  
Synonyms : DefendAL Heavy Duty Nitrite-Free Extended Life Antifreeze/Coolant – 2-9022  
DefendAL Heavy Duty Nitrite-Free Extended Life Antifreeze/Coolant 50/50 – 2-9023  
DefendAL Heavy Duty Nitrite-Free Extended Life Antifreeze/Coolant 60/40

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

Use of the substance/mixture : Antifreeze.  
Coolant.

### 1.3. Details of the supplier of the safety data sheet

KOST USA, Inc.  
1000 Tennessee Ave.  
Cincinnati, 45229 - USA  
T 1-800-661-9391 - F 1-513-492-5555  
[sales@kostusa.com](mailto:sales@kostusa.com) - [www.kostusa.com](http://www.kostusa.com)

### 1.4. Emergency telephone number

Emergency number : 1-800-424-9300  
CHEMTREC (24 HOURS)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### GHS-US classification

Acute Tox. 4 (Oral) H302  
Skin Irrit. 2 H315  
Eye Irrit. 2A H319  
STOT RE 2 H373

Full text of H-statements: see section 16

### 2.2. Label elements

#### GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

GHS08

Signal word (GHS-US) : Warning  
Hazard statements (GHS-US) : H302 - Harmful if swallowed  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H373 - May cause damage to organs through prolonged or repeated exposure  
Precautionary statements (GHS-US) : P260 - Do not breathe mist, spray, vapours  
P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P280 - Wear eye protection, protective gloves  
P301+P312 - If swallowed: Call a doctor if you feel unwell  
P302+P352 - If on skin: Wash with plenty of water  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P314 - Get medical advice/attention if you feel unwell  
P321 - Specific treatment (see First aid measures on this label)  
P330 - Rinse mouth  
P332+P313 - If skin irritation occurs: Get medical advice/attention  
P337+P313 - If eye irritation persists: Get medical advice/attention  
P362+P364 - Take off contaminated clothing and wash it before reuse  
P501 - Dispose of contents/container to an authorised waste collection point

# Safety Data Sheet

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

## 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

Name	Product identifier	%	GHS-US classification
Ethylene glycol	(CAS No) 107-21-1	40 – 95	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
Potassium hydroxide	(CAS No) 1310-58-3	1 – 2.5	Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314

\*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general :

First-aid measures after inhalation :

First-aid measures after skin contact :

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 eye contact :

If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

First-aid measures after ingestion :

Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

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

May cause damage to organs through prolonged or repeated exposure.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Inhalation may cause: irritation, coughing, shortness of breath.

Symptoms/injuries :

Causes skin irritation.

Symptoms/injuries after inhalation :

Causes serious eye irritation.

Symptoms/injuries after skin contact :

Swallowing a small quantity of this material will result in serious health hazard.

Symptoms/injuries after eye contact :

Symptoms/injuries after ingestion :

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

All treatments should be based on observed signs and symptoms of distress in the patient.

both

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media :

Carbon dioxide. Dry powder. Foam. Sand. Water spray.

Unsuitable extinguishing media :

None known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard :

No specific fire or explosion hazard.

Reactivity: No dangerous reactions known.

### 5.3. Advice for firefighters

Firefighting instructions :

Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.

Protection during firefighting :

Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flare resistant/retardant clothing. Wear a self contained breathing apparatus.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures :

Avoid all eye and skin contact and do not breathe vapour and mist.

#### 6.1.1. For non-emergency personnel

Protective equipment :

Wear suitable gloves resistant to chemical penetration. Chemical goggles or safety glasses.

# Safety Data Sheet

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

Emergency procedures : Ventilate area.

## 6.1.2. For emergency responders

Protective equipment : Wear suitable gloves. Chemical goggles or safety glasses. Where excessive vapour, mist, or dust may result, use approved respiratory protection equipment.

Emergency procedures : Ventilate area.

## 6.2. Environmental precautions

Avoid release to the environment.

## 6.3. Methods and material for containment and cleaning up

For containment : Absorb and/or contain spill with inert material, then place in suitable container.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Take up in non-combustible absorbent material and shove into container for disposal.

## 6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Avoid breathing mist/vapour/spray. Do not eat, drink or smoke when using this product.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

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

Incompatible products : Strong oxidizing agents. Strong acids. Strong bases.

Incompatible materials : Heat sources. Direct sunlight.

Prohibitions on mixed storage : Keep away from incompatible materials.

### 7.3. Specific end use(s)

Antifreeze. Coolant.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

DefendAL Heavy Duty Nitrite-Free Extended Life Antifreeze/Coolant Concentrate and 50/50		
ACGIH	Not applicable	
OSHA	Not applicable	
Potassium hydroxide (1310-58-3)		
ACGIH	ACGIH Ceiling (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
OSHA	Not applicable	
Ethylene glycol (107-21-1)		
ACGIH	ACGIH Ceiling (ppm)	39.4 ppm
ACGIH	Remark (ACGIH)	URT & eye irr
OSHA	Not applicable	

### 8.2. Exposure controls

Appropriate engineering controls : Avoid creating mist or spray. Avoid splashing. Either local exhaust or general room ventilation is usually required.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear suitable gloves resistant to chemical penetration. Nitrile rubber gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : In case of inadequate ventilation wear respiratory protection. Use an approved respirator equipped with oil/mist cartridges.

Other information : Do not eat, drink or smoke when using this product.

# Safety Data Sheet

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

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Yellow Blue red
Odour	: No data available
Odour threshold	: No data available
pH	: 8.4 - 8.6
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: No data available
Freezing point	: -36 °C
Boiling point	: 108 °C
Flash point	: >= 116 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: Specific Gravity @ 15.5 °C - 1.08-1.131
Solubility	: No data available
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
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reactions known.

### 10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Avoid excessive heat or cold. Keep away from sources of ignition.

### 10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers.

### 10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

DefendAL Heavy Duty Nitrite-Free Extended Life Antifreeze/Coolant Concentrate and 50/50	
ATE US (oral)	518.052 mg/kg bodyweight
Potassium hydroxide (1310-58-3)	
LD50 oral rat	333 mg/kg bodyweight
ATE US (oral)	333.000 mg/kg bodyweight

# Safety Data Sheet

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

<b>Ethylene glycol (107-21-1)</b>	
LD50 dermal rat	> 3500 mg/kg mouse
LC50 inhalation rat (mg/l)	> 2.5 mg/l/4h
ATE US (oral)	500.000 mg/kg bodyweight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

## **Ethylene glycol (107-21-1)**

IARC group	Not listed in carcinogenicity class
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: May cause damage to organs through prolonged or repeated exposure.

## **Ethylene glycol (107-21-1)**

LOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight/day
NOAEL (oral, rat, 90 days)	150 mg/kg bodyweight/day kidney
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: Inhalation may cause: irritation, coughing, shortness of breath.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard.
Likely routes of exposure	: Skin and eye contact;Inhalation

## **SECTION 12: Ecological information**

### **12.1. Toxicity**

Ecology - general : No ecotoxicological data about this product are known.

<b>Ethylene glycol (107-21-1)</b>	
LC50 fish 1	72860 mg/l Pimephales promelas
EC50 Daphnia 1	> 100 mg/l
NOEC chronic fish	15380 mg/l Pimephales promelas
NOEC chronic crustacea	8590 mg/l Ceriodaphnia sp.

### **12.2. Persistence and degradability**

#### **DefendAL Heavy Duty Nitrite-Free Extended Life Antifreeze/Coolant Concentrate and 50/50**

Persistence and degradability : Not established.

#### **Ethylene glycol (107-21-1)**

Persistence and degradability : Readily biodegradable.

### **12.3. Bioaccumulative potential**

#### **DefendAL Heavy Duty Nitrite-Free Extended Life Antifreeze/Coolant Concentrate and 50/50**

Bioaccumulative potential : Not established.

#### **Ethylene glycol (107-21-1)**

Log Pow	- 1.36
Bioaccumulative potential	Not expected to bioaccumulate.

### **12.4. Mobility in soil**

No additional information available

### **12.5. Other adverse effects**

No additional information available

# Safety Data Sheet

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

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.  
Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

## SECTION 14: Transport information

In accordance with DOT

Non-bulk:

Not a dangerous good

Bulk:

Concentrate RQ >= 5,382 lbs

50/50 RQ >= 10,103 lbs 60/40

RQ >=8,503 lbs Transport

document description UN- : RQ, UN3082 Environmentally hazardous substances, liquid, n.o.s. (Ethylene Glycol), 9, III

No.(DOT) : UN3082

Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s. (Ethylene Glycol)

Transport hazard class(es) (DOT) : 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

### Additional information

Other information : No supplementary information available.

### 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

<b>Potassium hydroxide (1310-58-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Ethylene glycol (107-21-1)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb
SARA Section 313 - Emission Reporting	>95%

### 15.2. International regulations

#### CANADA

<b>Potassium hydroxide (1310-58-3)</b>	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
<b>Ethylene glycol (107-21-1)</b>	
Listed on the Canadian DSL (Domestic Substances List) inventory.	

#### EU-Regulations

# Safety Data Sheet

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

## Potassium hydroxide (1310-58-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

## Ethylene glycol (107-21-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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

Acute Tox. 4 (Oral) H302

Skin Irrit. 2 H315

Eye Irrit. 2 H319

STOT RE 2 H373

Full text of classification categories and H statements : see section 16

### 15.2.2. National regulations

#### Potassium hydroxide (1310-58-3)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on KECI (Korean Existing Chemicals Inventory)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on Taiwan National Chemical Inventory  
Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on the Chinese Catalog of Hazardous Chemicals.  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

#### Ethylene glycol (107-21-1)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on Taiwan National Chemical Inventory  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on KECI (Korean Existing Chemicals Inventory)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

### 15.3. US State regulations

#### Potassium hydroxide (1310-58-3)

U.S. - Minnesota - Hazardous Substance List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - New York - Right to Know List of Hazardous Chemicals  
U.S. - Pennsylvania - List of Hazardous Substances

#### Ethylene glycol (107-21-1)

U.S. - Minnesota - Hazardous Substance List  
U.S. - Pennsylvania - List of Hazardous Substances  
U.S. - New Jersey - Right to Know Hazardous Substance List

## SECTION 16: Other information

### Disclaimer:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

End-use applications **NOT** supported by Kost USA, Inc. for monoethylene glycol, diethylene glycol and triethylene glycol. These limitations include products restricted by law, applications in which may raise unacceptable risks, and other applications which Kost USA, Inc. has decided not to, including minimizing unnecessary risk and liabilities to the company. Kost USA, Inc. does not knowingly market these products into these non-supported applications. This list is not all-inclusive, and Kost USA, Inc. reserves the right to modify the same at any time.

- The use of production of tobacco and in the manufacture of tobacco products (including but not limited to additives, humectants, filters, inks, and paper)
- The use for the generation of artificial smoke / theatrical fogs / mist. This includes applications such as artificial / e-cigarettes.
- The use as ingredient in fuel for warming foods (Sterno<sup>TM</sup>-like application) or in fuel for heating an enclosed space where human exposure is possible.
- The use in fire extinguishing sprinkler systems.
- The use in the manufacture of munitions.
- The use in the production of de-icers for use on roadways, sidewalks and in aircraft lavatories.
- The use as a component of heat transfer fluids in systems where the heat transfer fluids could infiltrate (i.e., via an exchanger leak, backflow prevention failure, or other means) a potable water.

# Safety Data Sheet

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

- The use as a non-reacted component in a formulation for direct internal or external human / animal contact, including, but not limited to ingestion, inhalation, and skin contact and in medical / veterinary devices and medical / veterinary. Examples of some such applications are uses as a direct component in foods, beverages, pharmaceuticals, cosmetics, personal care products or children's products.
- The use for consumer or hospital usage for deodorizing or air "purifying" purposes by spraying as an aerosol.
- The use as a non-reacted component in adhesives, plasticizers, and softening agents for packaging having direct contact with food or beverage.
- The use as a non-reacted component in the formulation of glues, pastes, ice / heat packs or other items where the potential for significant human contact and/or ingestion exists (including but not limited to children's school glue/paste or arts/craft glue/paste, toys, children products).
- The use as a fluid for pressure testing piping.

For more information contact your Kost USA, Inc. representative.

Indication of changes : Transport information.  
Revision date : 07/15/2015  
Data sources : ESIS (European Chemical Substances Information System; accessed at: <http://esis.jrc.ec.europa.eu/index.php?PGM=cla>, ACGIH 2000. European Chemicals Agency (ECHA) Registered Substances list. Accessed at <http://echa.europa.eu/>. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. National Fire Protection Association; Fire Protection Guide to Hazardous Materials; 10th edition. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at <http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html>.

Abbreviations and acronyms : ACGIH (American Conference of Government Industrial Hygienists).  
ATE: Acute Toxicity Estimate.  
CAS (Chemical Abstracts Service) number.  
CLP: Classification, Labelling, Packaging.  
EC50: Environmental Concentration associated with a response by 50% of the test population.  
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).  
LD50: Lethal Dose for 50% of the test population.  
OSHA: Occupational Safety & Health Administration.  
STEL: Short Term Exposure Limits.  
TSCA: Toxic Substances Control Act.  
TWA: Time Weight Average.

Other information : None.

Full text of H-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H373	May cause damage to organs through prolonged or repeated exposure



# Safety Data Sheet

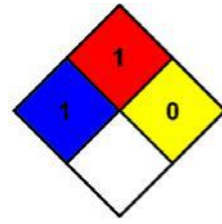
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NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

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

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



**SDS Prepared by:** The Redstone Group, LLC  
6077 Frantz Rd.  
Suite 206  
Dublin, OH USA 43016  
T 614-923-7472  
[www.redstonegrp.com](http://www.redstonegrp.com)

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