

Material Safety Data Sheet (MSDS)

Product	Kixx AF Coolant		
Team	Date of first preparation	Date of last revision	Revision Number
Finished Lubricants R&D Team	2012-11-30	2017-10-26	3

1. Chemical Product and Company Information

- 1) Product : Kixx AF Coolant
- 2) Recommended use of the chemical and restrictions on use
 - Recommended use : Engine Cooling System
 - Restrictions on use : No data
- 3) Manufacturer information
 - Manufacturer : Dong-A special chemical Co.Ltd
 - Address : 441-32, Banje-Ri, Wongok-Myun, Ansong City, Kyungki-Do, 441-811, Korea
 - Information service or emergency call : +82-31-652-1301
 - Department in charge : R&D Center
- 4) Supplier information
 - Supply company : GS Caltex Corporation
 - Address : Nonhyeon-ro 508(Yeoksam-dong), Gangnam-gu, Seoul, South Korea
 - Information service or emergency call : 82-2-1899-5145
 - Department in charge : Finished Lubricants R&D Team

2. Hazards Identification

- 1) Classification of the substance or mixture
 - Severe eye damage, or stimulative substances Category 2
 - Reproductive toxicity substances Category 1B
 - Target organ systemic toxicity (single exposure) category 1
 - Target organ systemic toxicity (repeated exposure) category 1
- 2) GHS labels, including precautionary statements
 - Symbol



- Signal word : Danger
- Hazard statement
 - H319 Causes serious eye irritation
 - H360 May damage fertility or the unborn child

H370 Causes damage to organs
 H372 Causes damage to organs through prolonged or repeated exposure

○ Precautionary statement

– Prevention

P264 Wash ... thoroughly after handling.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 P270 Do not eat, drink or smoke when using this product.

– Response

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses. If present and easy to do. Continue rinsing.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor/...
 P321 Specific treatment (see...on this label).
 P314 Get medical advice/attention if you feel unwell.

– Storage

P405 Store locked up.

– Disposal

P501 Dispose of contents/container to...

3) Other hazards which do not result in classification

Component	NFPA	Health	Fire	Reactivity
– Ethylene glycol		2	1	0
– Sodium Benzoate		0	1	0
– Ionized water		0	0	0
– Trade secrets		0	0	0

3. Composition and Information on Ingredients

Component	Synonyms	CAS No.	Content(%)
1) Ethylene glycol	1,2-DIHYDROXYETHANE	107-21-1	90.0 ~ 95.0
2) Sodium Benzoate	BENZOIC ACID, SODIUM SALT	532-32-1	1.0 ~ 5.0
3) Ionized water	DIHYDROGEN OXIDE	7732-18-5	1.0 ~ 5.0
4) Trade secrets	Trade secrets	Trade secrets	Trade secrets

4. First Aid Measures

- 1) Eye contact :
 - Wash affected eyes for at least 15 minutes under running water with eyelids held open.
- 2) Skin contact :
 - Wash thoroughly with soap and water.
 - Remove contaminated clothing and shoes
- 3) Inhalation :
 - If difficulties occur after vapor/aerosol has been inhaled, remove to fresh air and seek medical attention.
- 4) Ingestion :
 - Rinse mouth immediately and then drink plenty of water, seek medical attention.
- 5) Most important symptoms/effects, acute and delayed :
 - Inhalation
 - Short term exposure: Irritation, headache, sleepiness, dizziness, adjustment (feature) loss, a blood disorder
 - Long-term exposure: Irritation, headache
 - Skin contact
 - Short term exposure: Allergic reactions.
 - Long-term exposure: Irritation, Allergic reactions.
 - Eye contact
 - Short term exposure: Irritation
 - Long-term exposure: Allergic reactions.
 - On ingestion
 - Short term exposure : vomiting, shortness of breath, headache, sleepiness, dizziness, emotional disorders, trembling, adjust (feature) loss, impaired vision, a heart condition, convulsions, lethargy
 - Long-term exposure:

- 6) First-aid treatment and information on medical doctors :
- Treat symptomatically.
- Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

- 1) Recommended(or prohibited) extinguishing media
- Recommended extinguishing media :
 - Dry extinguishing media, carbon dioxide, water spray, alcohol-resistant foam
 - Prohibited extinguishing media :
 - High pressure water shoot
 - Large fire :
 - No Data. Water spray, alcohol-resistant foam
- 2) Specific hazard from chemical material
- Thermal decomposition generate substance
 - Ethylene glycol: No Data
 - Sodium Benzoate: Sodium oxide
 - Ionized water: Not at all unknown.
 - Fire and Explosion Hazards
 - Ethylene glycol: No Data.
 - Sodium Benzoate: There is a slight risk of fire.
 - Ionized water: Fire risk is negligible.
- 3) Extinguishment :
- Ethylene glycol, Sodium Benzoate: If you can do without the risk of fire, the courage to move from the area. Spray some substance to the pressurized water leakage, preventing them from scattering.
 - Ionized water: No Data

6. Accidental Release Measures

- 1) Necessary actions to protect human health :
- Eliminate all sources of ignition, adequate ventilation
- 2) Necessary actions to protect the environment
- Do not abandon your product to rivers.
- 3) Purification and removal methods
- After absorbing material to absorb using the disposal, burning.

7. Handling and Storage

- 1) Safety handling :
- Store away from excessive heat and ignition sources.
- 2) Storage :
- Stored in a cool, dry place.

8. Exposure Control and Personal Protection

A. Exposure limits and biological exposure limits of chemical

1) Ethylene glycol

- Domestic Policy : TWA-C50ppmC12mg/m³
- ACGIH : No data
- Biological exposure limits : No data

2) Sodium Benzoate

- Domestic Policy : No data
- ACGIH : No data
- Biological exposure limits : No data

3) Ionized water

- Domestic Policy : No data
- ACGIH : No data
- Biological exposure limits : No data

4) Trade secrets

- Domestic Policy : No data
- ACGIH : No data
- Biological exposure limits : No data

B. Engineering management :

Ventilation : local exhaust ventilation system, install and maintain appropriate control over the wind speed to make it.

C. Personal protection equipment :

- Respiratory protection :
Ethylene glycol: A mask poison prevention
- Eyes protection :
Safety glasses with side-shields(frame goggles)
- Hands protection :
Chemical resistance protective gloves
- Human body protection :
Wearing of closed work clothing is recommended.

9. Physical and Chemical Properties

1) Appearance : blue liquid

2) Odor : No data

3) Odor threshold : No data

4) pH : 8~9 (30% solution)

5) Melting point/freezing point : No data

6) Initial boiling point or boiling range : > 160°C

- 7) Flash point : >100°C
- 8) Evaporation rate (BuAc=1) : No data
- 9) Flammability(solid, gas) : No data
- 10) Upper/lower flammability or explosive limits : No data
- 11) Vapor pressure : 2.2 mbar @ 20°C
- 12) Solubility : soluble
- 13) Vapor density : >1
- 14) Relative density : 1.127 g/ml @ 20°C
- 15) Partition coefficient: n-octano/water : No data
- 16) Auto-ignition temperature : No data
- 17) Decomposition temperature : No data
- 18) Viscosity : 20 ~ 30 mm²/s @ 20°C
- 19) Molecular weight : No data

10. Stability and Reactivity

- 1) Chemical stability :
 - Stable at room temperature and pressure.
- 2) Toxicant generation possibility during reaction :
 - No hazardous reactions when stored and handled according to instructions.
- 3) Prohibited conditions :
 - heat, lights, fire works
- 4) Prohibited materials :
 - An Oxidizing agent
- 5) Toxicant during decomposition :
 - Carbon oxides

11. Toxicological Information

A. Information on the likely routes of exposure

- Inhalation : No data
- Ingestion : No data
- Skin contact : No data

Eye contact : No data

B. Delayed and immediate effects and chronic effects from short or long term exposure

1) Ethylene glycol

Acute Toxicity

- Oral : Not determined / LD 50 > 4000 mg/kg bw : rat
- Dermal : Not determined / LD 50 > 10600 mg/kg bw : rabbit
- Inhalation : No data

Skin Corrosion / irritation : Not classified– rabbit, Weak stimulus

Severe eye Damage/irritation : Category 2A

Respiratory sensitization : No data

Skin sensitization : No data

Carcinogenicity : ACGIH Group A4

Germ cell mutagenity : Not classified

Reproductive Toxicity : Toxic to Reproduction Category 1B

Specific target organ Toxicity(single exposure) : Category 1

(Central nervous system, kidneys, heart, respiratory)

Specific target organ Toxicity(repeated exposure) : Category 1

(Central nervous system, kidneys, heart, respiratory)

Aspiration toxicity : No data

2) Sodium Benzoate

Acute Toxicity

- Oral : LD50 > 4,070mg/kg(rat)
- Dermal : No data
- Inhalation : No data

Skin Corrosion / irritation : No data

Severe eye Damage / irritation : No data

Respiratory sensitization : No data

Skin sensitization : No data

Carcinogenicity : Not Applicable

Germ cell mutagenity : No data

Reproductive Toxicity : No data

Specific target organ Toxicity(single exposure) : No data

Specific target organ Toxicity(repeated exposure) : No data

Aspiration toxicity : No data

3) Ionized water

Acute Toxicity

- Oral : Not classified
- Dermal : Not classified
- Inhalation : Not classified

Skin Corrosion / irritation : Not classified

Severe eye Damage / irritation : Not classified

Respiratory sensitization : Not classified

Skin sensitization : Not classified

Carcinogenicity : Not classified

Germ cell mutagenity : Not classified

Reproductive Toxicity : Not classified

Specific target organ Toxicity(single exposure) : Not classified

- Specific target organToxicity(repeated exposure) : Not classified
- Aspiration toxicity : Not classified

4) Trade secrets

- Acute Toxicity
 - Oral : No data
 - Dermal : No data
 - Inhalation : No data
- Skin Corrosion / irritation : No data
- Severe eye Damage / irritation : No data
- Respiratory sensitization : No data
- Skin sensitization : No data
- Carcinogenity : No data
- Germ cell mutagenity : No data
- ReproductiveToxicity : No data
- Specific target organToxicity(single exposure) : No data
- Specific target organToxicity(repeated exposure) : No data
- Aspiration toxicity : No data

C. Numerical measures of toxicity(such as ATE) : No data

12. Ecological Information

A. Aquatic, terrestrial organisms toxicity :
- No data

B. Persistence and degradability :
- Test method: OECD 302B/ISO 9888/EEC88
- Removal :>70%

C. Bioaccumulative potential
- No data

D. Mobility in soil :
- No data

E. Other adverse effects :
- No data

13. Disposal Considerations

1) Disposal methods :
Obsolete applied in accordance with regulations.

2) Disposal cautions :
Not Applicable

14. Transport Information

This product is not regulated for carriage according to ADR/RID, ADN, IMDG, ICAO/IATA.

- 1) UN number : Not applicable
- 2) UN Proper Shipping Name : Not applicable
- 3) Transport hazard classes : Not applicable
- 4) Packing group, if applicable : Not applicable
- 5) Environmental hazards : Not applicable
- 6) Special precautions for user : Not applicable

15. Regulatory Information

A. Industrial safety regulations

Measure workplace substance :

- Ethylene glycol: Apply
- Sodium Benzoate: Not Applicable
- Ionized water: Not Applicable
- Trade secrets: No Data

Destination management of hazardous substances:

- Ethylene glycol: Apply
- Sodium Benzoate: Not Applicable
- Ionized water: Not Applicable
- Trade secrets: No Data

Substance exposure standards set:

- Ethylene glycol: Apply
- Sodium Benzoate: Not Applicable
- Ionized water: Not Applicable
- Trade secrets: No Data

B. Chemical control act (Korea)

- Ethylene glycol: Not Applicable
- Sodium Benzoate: Not Applicable
- Ionized water: Not Applicable
- Trade secrets: No Data

Administration Act of hazardous chemicals regulation:

The finished product information- Not Applicable

Information componentized - Not Applicable (Ethylene glycol, Ionized water, Sodium Benzoate)

C. Hazardous Safety Administration Act by regulation

- Ethylene glycol: Apply
- Sodium Benzoate: Not Applicable
- Ionized water: Not Applicable
- Trade secrets: No Data

D. Waste Management Act by regulation: No data

E. Other internal and foreign acts

- EU classification
 - Category results confirmed: Ethylene glycol: Xn ; R22
 - Hazard Statement: Ethylene glycol: R22
 - Phrases precautions: Ethylene glycol: S2
- U.S. acts
 - OSHA regulation (29CFR1910.119): Not Applicable
 - CERCLA 103 regulation (40CFR302.4): Ethylene glycol: 2,267.995(kg), 5,000(lb)
 - EPCRA 302 regulation (40CFR355.30): Not Applicable
 - EPCRA 304 regulation (40CFR355.40): Not Applicable
 - EPCRA 313 regulation (40CFR372.65): Ethylene glycol: Apply
 - PIC substance: Not Applicable
 - POPs substance: Not Applicable

16. Other Information

1) References

- Korea Occupational Safety & Health Agency
- GS Caltex R&D Center
- MSDS of raw material from supplier
- KOSHANET
- Occupation safety and health acts of Korea
- Globally Harmonized System of classification and labeling of chemicals (GHS), First revised edition, United Nations
- EINECS(European Inventory of Existing Commercial Chemical Substances)
- ACGIH(American Conference of Governmental Safety and Health)
- IUCLID Dataset

2) Date of preparation of the first version of the MSDS : 2012.11.30

3) Revised frequency and Date of preparation of the latest version of the MSDS : 2017-10-26 (3)

4) Others :

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Certain hazards are described herein, however these may not be the only hazards that exist. All materials may present unknown hazards and should be used with caution.

Customers are encouraged to review this information, follow precautions, and comply with all applicable laws and regulations regarding the use and disposal of this product.

For specific technical data or advice concerning this product as supplied in your country please contact your local sales representative.

The final determination of the suitability of any material is the sole responsibility of the user.