

Safety Data Sheet

Antifreeze K12+ concentrate

Replaces date: 15/01/2024

Revision date: 13/03/2024

Version: 2.0.0

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

1.1. Product identifier

Trade name: Antifreeze K12+ concentrate

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

Recommended uses: Anti-freezing agents.

1.3. Details of the supplier of the safety data sheet

Supplier

Company: Kramp UK Ltd
Address: Unit 5
Lancaster Way
Zip code: SG18 8YL
City: Biggleswade
Country: UNITED KINGDOM
E-mail: sales.uk@kramp.com
Phone: +44(0)1767 602 600

1.4. Emergency Telephone Number

Members of the public: 111 (NHS 111 (Scotland: NHS 24)).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

CLP-classification: Acute Tox. 4;H302
STOT RE 2;H373

Most serious harmful effects: Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure. The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication. Can be absorbed through the skin causing symptoms such as dizziness and headache. The product contains a substance which is a suspected reproductive hazard. May cause slight irritation to the skin and eyes.

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2.2. Label elements

Pictograms



Signal word:

Warning

Contains

Substance:

ethanediol;

Hazard statements

H302

Harmful if swallowed.

H373

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P260

Do not breathe dust/fume/gas/mist/vapours/spray.

P301+312

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P330

Rinse mouth.

P501

Dispose of contents/container in accordance with local regulation.

2.3. Other hazards

The product does not contain any PBT or vPvB substances.

Endocrine disrupting properties: None known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

| Substance | CAS No./ EC No./ REACH Reg. No. | Concentration | Notes | CLP-classification |
|-------------------------|---------------------------------|---------------|-------|--|
| ethanediol | 107-21-1 203-473-3 | 50 - 100 % | | Acute Tox. 4;H302 STOT RE 2;H373 LC50 (vapour) (Acute toxicity - inhalation): > 2.5 mg/l LD50 (Acute toxicity - oral): 7712 mg/kg bw LD50 (Acute toxicity - dermal): > 3500 mg/kg bw |
| Potassium isononanoate | 84501-71-3 282-991-1 | 2.5 -< 10 % | | Skin Irrit. 2;H315 Eye Irrit. 2;H319 |
| Methyl-1H-benzotriazole | 29385-43-1 249-596-6 | 0.25 ≤ 10 % | | Acute Tox. 4;H302 Repr. 2;H361d Aquatic Chronic 2;H411 LD50 (Acute toxicity - oral): 720 mg/kg bw LD50 (Acute toxicity - dermal): > 2000 mg/kg bw |

Please see section 16 for the full text of H- / EUH-phrases.

SECTION 4: First aid measures

4.1. Description of first aid measures

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| | |
|----------------------|--|
| Inhalation: | Seek fresh air. Seek medical advice in case of persistent discomfort. |
| Ingestion: | Wash out mouth thoroughly and drink 1-2 glasses of water in small sips. Seek medical advice in case of discomfort. |
| Skin contact: | Remove contaminated clothing. Wash the skin with water. Seek medical advice in case of persistent discomfort. |
| Eye contact: | Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist. |
| General: | When obtaining medical advice, show the safety data sheet or label. |

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

Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure. The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication. Can be absorbed through the skin causing symptoms such as dizziness and headache. The product contains at least one substance which is a suspected reproductive hazard. May cause slight irritation to the skin and eyes.

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

Treat symptoms. No special immediate treatment required.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: Extinguish with powder, foam or water mist. Use water or water mist to cool non-ignited stock.

Unsuitable extinguishing media: Do not use water stream, as it may spread the fire.

5.2. Special hazards arising from the substance or mixture

The product decomposes when combusted and the following toxic gases can be formed: Carbon monoxide and carbon dioxide.

5.3. Advice for firefighters

Wear Self-Contained Breathing Apparatus (SCBA) with a chemical protection suit only where personal (close) contact is likely. Move containers from danger area if it can be done without risk. Avoid inhalation of vapour and flue gases - seek fresh air.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Stay upwind/keep distance from source. Stop leak if this can be done without risk. Wear gloves. Wear respiratory protective equipment. Wear safety goggles if there is a risk of eye splash.

For emergency responders: In addition to the above: Protective suit equivalent to EN 368, type 3, is recommended.

6.2. Environmental precautions

Prevent spillage from entering drains and/or surface water.

6.3. Methods and material for containment and cleaning up

Contain and absorb spill with sand or other absorbent material and transfer to suitable waste containers. Wipe up minor spills with a cloth.

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6.4. Reference to other sections

See section 8 for type of protective equipment.

See section 13 for instructions on disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Running water and eye wash equipment must be available. Wash hands before breaks, before using restroom facilities, and at the end of work. A risk assessment must ensure that employees are not exposed to effects which might pose a risk by pregnancy or breastfeeding.

7.2. Conditions for safe storage, including any incompatibilities

To be stored safely out of reach of children and not together with food, feed, medicine and the like. Keep in tightly closed original packaging. Do not store with the following: Strong oxidisers.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit

| Substance name | Time period | ppm | mg/m ³ | fiber/cm ³ | Remarks | Comments |
|----------------|-------------|-----|-------------------|-----------------------|-------------|----------|
| ethanediol | 8h | | 10 | | Particulate | Sk |
| ethanediol | 8h | 20 | 52 | | vapour | Sk |
| ethanediol | 15m | | | | Particulate | Sk |
| ethanediol | 15m | 40 | 104 | | vapour | Sk |

Sk = Can be absorbed through the skin.

Measuring methods:

Compliance with occupational exposure limits may be checked by occupational hygiene measurements.

Legal basis:

EH40/2005 Workplace exposure limits. Last amended January 2020.

PNEC

Methyl-1H-benzotriazole, cas-no 29385-43-1

| Exposure | Value | Assessment Factor | Extrapolation Method | Note |
|--|-----------------|-------------------|----------------------|------|
| PNEC aqua (freshwater) | 0,008 mg/l | | | |
| PNEC aqua (marine water) | 0,02 mg/l | | | |
| PNEC STP (wastewater-treatment facilities) | 39,4 mg/l | | | |
| PNEC sediment (freshwater) | 0,117 mg/kg dw | | | |
| PNEC sediment (marine water) | 0,0187 mg/kg dw | | | |
| PNEC aqua (intermittent releases) | 0,086 mg/l | | | |

DNEL - workers

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| ethanediol, cas-no 107-21-1 | | | | | |
|---|------------------------|-------------------|-----------------|-----------------------|------|
| Exposure | Value | Assessment Factor | Dose Descriptor | Main Impact Parameter | Note |
| Dermal DNEL (long-term exposure - systemic effects) | 106 mg/kg bw/day | | | | |
| Inhalation DNEL (long-term exposure - local effects) | 35 mg/m ³ | | | | |
| Methyl-1H-benzotriazole, cas-no 29385-43-1 | | | | | |
| Exposure | Value | Assessment Factor | Dose Descriptor | Main Impact Parameter | Note |
| Dermal DNEL (long-term exposure - systemic effects) | 0,3 mg/kg bw/day | | | | |
| Inhalation DNEL (long-term exposure - systemic effects) | 21,2 mg/m ³ | | | | |

DNEL - general population

| ethanediol, cas-no 107-21-1 | | | | | |
|---|------------------------|-------------------|-----------------|-----------------------|------|
| Exposure | Value | Assessment Factor | Dose Descriptor | Main Impact Parameter | Note |
| Dermal DNEL (long-term exposure - systemic effects) | 53 mg/kg bw/day | | | | |
| Inhalation DNEL (long-term exposure - local effects) | 7 mg/m ³ | | | | |
| Methyl-1H-benzotriazole, cas-no 29385-43-1 | | | | | |
| Exposure | Value | Assessment Factor | Dose Descriptor | Main Impact Parameter | Note |
| Oral DNEL (long-term exposure - systemic effects) | 0,01 mg/kg bw/day | | | | |
| Dermal DNEL (long-term exposure - systemic effects) | 0,01 mg/kg bw/day | | | | |
| Inhalation DNEL (long-term exposure - systemic effects) | 0,35 mg/m ³ | | | | |

8.2. Exposure controls

Appropriate engineering controls:

Wear the personal protective equipment specified below. Use the product under well-ventilated conditions.

Personal protective equipment, eye/face protection:

Wear safety goggles if there is a risk of eye splash. Eye protection must conform to EN 166/16321.

Personal protective equipment, hand protection:

Wear gloves. Type of material and thickness: Nitrile rubber. $\geq 0,4$ mm. Penetration time: >8 hours. Gloves must conform to EN 374.
The suitability and durability of a glove is dependant on usage, e.g. frequency and duration of contact, glove material thickness, functionality and chemical resistance. Always seek advice from the glove supplier.

Personal protective equipment, respiratory protection:

Use process ventilation. If this is not possible, use respiratory equipment.

Filter type: A / P2

Respiratory protection must conform to one of the following standards: EN 136/140/145.

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Environmental exposure controls:

Ensure compliance with local regulations for emissions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| Parameter | Value/unit |
|------------|--|
| State | Liquid |
| Colour | Pink |
| Odour | Characteristic |
| Solubility | Solubility in water: Completely miscible |

| Parameter | Value/unit | Remarks |
|---|-----------------------|------------------------------|
| Odour threshold | No data | |
| Melting point | No data | |
| Freezing point | No data | |
| Initial boiling point and boiling range | > 111 °C | (Cas: 107-21-1 (ethanediol)) |
| Flammability (solid, gas) | | Not spontaneously flammable |
| Flammability limits | No data | |
| Explosion limits | No data | |
| Flash Point | 111 °C | |
| Auto-ignition temperature | No data | |
| Decomposition temperature: | No data | |
| pH (solution for use) | No data | |
| pH (concentrate) | 8.3 | 20 °C. |
| Kinematic viscosity | No data | |
| Viscosity | No data | |
| Partition coefficient n-octanol/water | No data | |
| Vapour pressure | No data | |
| Density | 1.1 g/cm ³ | 20 °C. |
| Relative density | No data | |
| Relative vapour density | No data | |
| Relative density (sat. air) | No data | |
| Particle characteristics | No data | |

9.2. Other information

| Parameter | Value/unit | Remarks |
|----------------------|------------|---------------|
| Explosive properties | | Non-explosive |

Other Information:

VOC (Volatile organic compounds): 0 %

VOC (Schweiz): 0.00%

Solid substance 0.0%

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with the following: Strong oxidisers.

10.2. Chemical stability

The product is stable when used in accordance with the supplier's directions.

10.3. Possibility of hazardous reactions

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None known.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Strong oxidisers.

10.6. Hazardous decomposition products

The product decomposes when combusted or heated to high temperatures and the following toxic gases can be formed:
Carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - oral

ethanediol, cas-no 107-21-1

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|----------|-----------|---------------|---------------|------------|-------------|--------|
| Rat | LD50 | | 7712 mg/kg bw | | | |

Methyl-1H-benzotriazole, cas-no 29385-43-1

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|----------|-----------|---------------|--------------|------------|-------------|--------|
| Rat | LD50 | | 720 mg/kg bw | | OECD 401 | |

Harmful if swallowed.

Acute toxicity - dermal

ethanediol, cas-no 107-21-1

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|----------|-----------|---------------|-----------------|------------|-------------|--------|
| Mouse | LD50 | | > 3500 mg/kg bw | | | |

Methyl-1H-benzotriazole, cas-no 29385-43-1

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|----------|-----------|---------------|-----------------|------------|-------------|--------|
| Rabbit | LD50 | | > 2000 mg/kg bw | | OECD 402 | |

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Acute toxicity - inhalation

ethanediol, cas-no 107-21-1

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|----------|---------------|---------------|------------|------------|-------------|--------|
| Rat | LC50 (vapour) | 6 h | > 2.5 mg/l | | | |

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

Skin corrosion/irritation:

May irritate the skin - may cause reddening. The product does not have to be classified.
Test data are not available.

Serious eye damage/eye irritation:

May cause eye irritation. The product does not have to be classified. Test data are not available.

Respiratory sensitisation or skin sensitisation:

The product does not have to be classified. Test data are not available.

Germ cell mutagenicity:

The product does not have to be classified. Test data are not available.

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- Carcinogenic properties:** The product does not have to be classified. Test data are not available.
- Reproductive toxicity:** The product contains at least one substance which is a suspected reproductive hazard. The product does not have to be classified. Test data are not available.
- Single STOT exposure:** The product releases organic solvent vapours which may cause lethargy and dizziness. At high concentrations, the vapours may cause headache and intoxication. Can be absorbed through the skin causing symptoms such as dizziness and headache. The product does not have to be classified. Test data are not available.
- Repeated STOT exposure:** May cause damage to organs through prolonged or repeated exposure. The following organs will be damaged: Kidneys. Exposure route: Oral.
- Aspiration hazard:** The product does not have to be classified. Test data are not available.

11.2. Information on other hazards

Endocrine disrupting properties: None known.

Other toxicological effects

ethanediol, cas-no 107-21-1

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|----------|-------------|---------------|------------------|------------|-------------|--------|
| Rat | NOAEL(oral) | 90d | 150 mg/kg bw/day | | OECD 408 | |

Methyl-1H-benzotriazole, cas-no 29385-43-1

| Organism | Test Type | Exposure time | Value | Conclusion | Test method | Source |
|----------|-------------|---------------|------------------|------------|-------------|--------|
| Rat | NOAEL(oral) | 28d | 150 mg/kg bw/day | | OECD 407 | |

SECTION 12: Ecological information

12.1. Toxicity

ethanediol, cas-no 107-21-1

| Organism | Species | Exposure time | Test Type | Value | Conclusion | Test method | Source |
|-----------|--------------------------|---------------|-----------|-------------------|------------|------------------|--------|
| Crustacea | Daphnia magna | | 48hEC50 | > 100 mg/l | | OECD 202 | |
| Fish | Pimephales promelas | | 96hLC50 | 72860 mg/l | | | |
| Bacteria | Pseudomonas putida | | 16hEC50 | > 10000 mg/l | | DIN 38412/8 | |
| Algae | Raphidocelis subcapitata | | 96hEC50 | 6500 - 13000 mg/l | | EPA 600/9-78-018 | |

Methyl-1H-benzotriazole, cas-no 29385-43-1

| Organism | Species | Exposure time | Test Type | Value | Conclusion | Test method | Source |
|-----------|----------------------|---------------|-----------|------------|------------|-------------|--------|
| Fish | | | LC50 | > 100 mg/l | | OECD 203 | |
| Algae | Skeletonema costatum | | 72hIC50 | 53 mg/l | | ISO 10253 | |
| Crustacea | Daphnia sp. | | 48hEC50 | 15.8 mg/l | | OECD 202 | |

The product does not have to be classified. Based on existing data, the classification criteria are deemed not to have been met.

12.2. Persistence and degradability

Expected to be biodegradable. Test data are not available.

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12.3. Bioaccumulative potential

No bioaccumulation expected. Test data are not available.

12.4. Mobility in soil

Test data are not available.

12.5. Results of PBT and vPvB assessment

The product does not contain any PBT or vPvB substances.

12.6. Endocrine disrupting properties

None known.

12.7. Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Avoid discharge to drain or surface water.

If this product as supplied becomes a waste, it meets the criteria of a hazardous waste (Dir. 2008/98/EU). Collect spills and waste in closed, leak-proof containers for disposal at the local hazardous waste site.

Uncleansed packaging is to be disposed of via the local waste-removal scheme. Empty, cleansed packaging should be disposed of for recycling.

Category of waste:

EWC code: Depends on line of business and use, for instance 16 01 14* antifreeze fluids containing hazardous substances

Absorbent/cloth contaminated with the product: EWC code:
15 02 02* absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances

SECTION 14: Transport information

14.1. UN number or ID number: Not applicable.

14.2. UN proper shipping name: Not applicable.

14.3. Transport hazard class(es): Not applicable.

14.4. Packing group: Not applicable.

14.5. Environmental hazards: Not applicable.

14.6. Special precautions for user

None.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Special Provisions: Special care should be applied for employees under the age of 18. Young people under the age of 18 may not carry out any work causing harmful exposure to this product.

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Covered by:

The Health and Safety (Young Persons) Regulations 1997.

Council Directive (EC) on the introduction of measures to encourage improvements in the safety and health at work of pregnant workers and workers who have recently given birth or are breastfeeding.

The product is comprised by Regulation 1907/2006/EC "The Registration, Evaluation and Authorization of Chemicals" as amended by the stationary UK REACH etc. (EU Exit), Annex XVII (3) concerning restrictions.

15.2. Chemical Safety Assessment

Other Information: Chemical safety assessment has not been performed.

SECTION 16: Other information

Version history and indication of changes

| Version | Revision date | Responsible | Changes |
|---------|---------------|------------------------|-----------|
| 2.0.0 | 13/03/2024 | Bureau Veritas HSE/SUJ | 1,3,15,16 |

Abbreviations:

vPvB: Very Persistent and Very Bioaccumulative

PBT: Persistent, Bioaccumulative and Toxic

STOT: Specific Target Organ Toxicity

DNEL: Derived No Effect Level

PNEC: Predicted No Effect Concentration

Other Information:

This safety data sheet has been prepared for and applies to this product only. It is based on our current knowledge and the information that the supplier was able to provide about the product at the time of preparation. The safety data sheet complies with applicable law on preparation of safety data sheets in accordance with Regulation 1907/2006/EC "The Registration, Evaluation and Authorization of Chemicals" as amended by the stationary UK REACH etc. (EU Exit) as subsequently changed.

Training advice:

A thorough knowledge of this safety data sheet should be a prerequisite condition.

Classification method:

Calculation based on the hazards of the known components.

Hazard statements

H302

Harmful if swallowed.

H315

Causes skin irritation.

H319

Causes serious eye irritation.

H361d

Suspected of damaging the unborn child.

H373

May cause damage to organs through prolonged or repeated exposure.

H411

Toxic to aquatic life with long lasting effects.

SDS is prepared by

Company:

Bureau Veritas HSE Denmark A/S

Address:

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7000

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Fredericia

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Country:

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