



SAFETY DATA SHEET

KAYQUAT II

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : KAYQUAT II
KAYQUAT II

Other means of identification : Not applicable

Recommended use : Sanitizer

Restrictions on use : Reserved for industrial and professional use.

Product dilution information : 0.19 % - 0.39 %

Company : ECOLAB KOREA LTD.
8F, Daemyung Tower
135 Beobwon-ro, Songpa-gu, Seoul Korea 05836
82-1588-7595

Emergency telephone : 82-1588-7595

Issuing date : 10.10.2017

2. HAZARDS IDENTIFICATION

GHS Classification

Product AS SOLD

Acute toxicity (Inhalation) : Category 4
Skin corrosion/irritation : Category 1
Serious eye damage/eye irritation : Category 1
Carcinogenicity : Category 1A
Acute aquatic toxicity : Category 1
Chronic aquatic toxicity : Category 2

Product AT USE DILUTION

This material is not classified as hazardous under the Article 39 Paragraph 1 of the Industrial Safety and Health Act (ISHA). It is not regulated for the MSDS creation and labeling by the provision of Article 41 Paragraph 1 and 4 of the ISHA.

GHS label elements

Product AS SOLD

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.
Causes serious eye damage.
Harmful if inhaled.
May cause cancer.
Very toxic to aquatic life.
Toxic to aquatic life with long lasting effects.

SAFETY DATA SHEET

KAYQUAT II

Precautionary Statements : **Prevention:**
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Wash the contact area thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. IF exposed or concerned: Get medical advice/ attention. Wash contaminated clothing before reuse. Collect spillage.
Storage:
Store locked up.
Disposal:
Dispose of contents and container according to wastes control act.

Product AT USE DILUTION

Precautionary Statements : **Prevention:**
Wash hands thoroughly after handling.
Response:
Get medical advice/ attention if you feel unwell.
Storage:
Store in accordance with local regulations.

Product AS SOLD

Other hazards : None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Product AS SOLD

Pure substance/mixture : Mixture

| Chemical name | CAS-No. | Concentration (%) |
|---|------------|-------------------|
| Quaternary ammonium compounds, di-C8-10-alkyldimethyl, chlorides | 68424-95-3 | 1 - 10 |
| n-Alkyl (C14 50%; C12 40%; C16 10%) dimethyl benzyl ammonium chloride | 68424-85-1 | 1 - 10 |
| ethanol | 64-17-5 | 1 - 10 |

Product AT USE DILUTION

| Chemical name | CAS-No. | Concentration (%) |
|---|------------|-------------------|
| n-Alkyl (C14 50%; C12 40%; C16 10%) dimethyl benzyl ammonium chloride | 68424-85-1 | < 0.1 |

All unlisted components do not contribute to the overall hazard of the product and are trade secret, making up 100% of the full composition.

4. FIRST AID MEASURES

Product AS SOLD

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at

SAFETY DATA SHEET

KAYQUAT II

least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention.
- Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- Notes to physician : Treat symptomatically.
- Most important symptoms and effects, both acute and delayed : See Section 11 for more detailed information on health effects and symptoms.

Product AT USE DILUTION

- In case of eye contact : Rinse with plenty of water.
- In case of skin contact : Rinse with plenty of water.
- If swallowed : Rinse mouth. Get medical attention if symptoms occur.
- If inhaled : Get medical attention if symptoms occur.

5. FIRE-FIGHTING MEASURES

Product AS SOLD

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Unsuitable extinguishing media : None known.
- Specific hazards during fire fighting : Exposure to decomposition products may be a hazard to health.
- Hazardous combustion products : Decomposition products may include the following materials:
Carbon oxides
Nitrogen oxides (NOx)
Sulfur oxides
Oxides of phosphorus
- Special protective equipment for fire-fighters : Use personal protective equipment.
- Specific extinguishing methods : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

SAFETY DATA SHEET

KAYQUAT II

Product AS SOLD

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Product AT USE DILUTION

Personal precautions, protective equipment and emergency procedures : Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

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Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

7. HANDLING AND STORAGE

Product AS SOLD

Advice on safe handling : Do not ingest. Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Use only with adequate ventilation. Wash hands thoroughly after handling. Do not get in eyes, on skin, or on clothing.

Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

Storage temperature : 0 °C to 50 °C

Product AT USE DILUTION

Advice on safe handling : Avoid contact with skin and eyes. Wash hands thoroughly after handling.

Conditions for safe storage : Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Product AS SOLD

Ingredients with workplace control parameters

| Ingredients | CAS-No. | Form of exposure | Permissible concentration | Basis |
|-------------|---------|------------------|---------------------------|-------|
|-------------|---------|------------------|---------------------------|-------|

SAFETY DATA SHEET

KAYQUAT II

| | | | | |
|---------|---------|-----|--------------------------------------|-----------|
| ethanol | 64-17-5 | TWA | 1,000 ppm 1,900 mg/m ³ | KR OEL |
| ethanol | 64-17-5 | TWA | 1,000 ppm 1,900 mg/m ³ | NIOSH REL |
| | | TWA | 1,000 ppm 1,900 mg/m ³ | OSHA Z1 |

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection : When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Product AT USE DILUTION

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection : No special protective equipment required.

Hand protection : No special protective equipment required.

Skin protection : No special protective equipment required.

Respiratory protection : No personal respiratory protective equipment normally required.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | Product AS SOLD | Product AT USE DILUTION |
|----------------|----------------------|-------------------------|
| Appearance | : liquid | liquid |
| Color | : clear, red | light pink |
| Odor | : slight | slight |
| pH | : 6.0 - 9.0, (100 %) | 8.0 |
| Flash point | : Not applicable | |
| Odor Threshold | : No data available | |

SAFETY DATA SHEET

KAYQUAT II

| | |
|---|--|
| Melting point/freezing point | : No data available |
| Initial boiling point and boiling range | : > 100 °C |
| Evaporation rate | : No data available |
| Flammability (solid, gas) | : No data available |
| Upper explosion limit | : No data available |
| Lower explosion limit | : No data available |
| Vapor pressure | : No data available |
| Relative vapor density | : No data available |
| Relative density | : 0.984 - 1.008 |
| Water solubility | : soluble |
| Solubility in other solvents | : No data available |
| Partition coefficient: n-octanol/water | : No data available |
| Autoignition temperature | : No data available |
| Thermal decomposition | : No data available |
| Viscosity, kinematic | : No data available |
| Explosive properties | : No data available |
| Oxidizing properties | : The substance or mixture is not classified as oxidizing. |
| Molecular weight | : No data available |
| VOC | : No data available |

10. STABILITY AND REACTIVITY

Product AS SOLD

| | |
|------------------------------------|---|
| Chemical stability | : Stable under normal conditions. |
| Possibility of hazardous reactions | : No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | : None known. |
| Incompatible materials | : None known. |
| Hazardous decomposition products | : Decomposition products may include the following materials: Carbon oxides Nitrogen oxides (NO _x) Sulfur oxides Oxides of phosphorus |

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Product AS SOLD

Eyes : Causes serious eye damage.

SAFETY DATA SHEET

KAYQUAT II

| | |
|------------------|--|
| Skin | : Causes severe skin burns. |
| Ingestion | : Causes digestive tract burns. |
| Inhalation | : Harmful if inhaled. May cause nose, throat, and lung irritation. |
| Chronic Exposure | : May cause cancer. |

Product AT USE DILUTION

| | |
|------------|---|
| Eyes | : Health injuries are not known or expected under normal use. |
| Skin | : Health injuries are not known or expected under normal use. |
| Ingestion | : Health injuries are not known or expected under normal use. |
| Inhalation | : Health injuries are not known or expected under normal use. |

Experience with human exposure

Product AS SOLD

| | |
|--------------|---------------------------------|
| Eye contact | : Redness, Pain, Corrosion |
| Skin contact | : Redness, Pain, Corrosion |
| Ingestion | : Corrosion, Abdominal pain |
| Inhalation | : Respiratory irritation, Cough |

Product AT USE DILUTION

| | |
|--------------|----------------------------------|
| Eye contact | : No symptoms known or expected. |
| Skin contact | : No symptoms known or expected. |
| Ingestion | : No symptoms known or expected. |
| Inhalation | : No symptoms known or expected. |

Toxicity

Product AS SOLD

Product

| | |
|-----------------------------------|---|
| Acute oral toxicity | : Acute toxicity estimate : > 2,000 mg/kg |
| Acute inhalation toxicity | : 4 h Acute toxicity estimate : 1.35 mg/l Test atmosphere: dust/mist |
| Acute dermal toxicity | : Acute toxicity estimate : > 2,000 mg/kg |
| Skin corrosion/irritation | : No data available |
| Serious eye damage/eye irritation | : No data available |
| Respiratory or skin sensitization | : No data available |
| Carcinogenicity | : No data available |
| Reproductive effects | : No data available |
| Germ cell mutagenicity | : No data available |
| Teratogenicity | : No data available |

SAFETY DATA SHEET

KAYQUAT II

STOT-single exposure : No data available
STOT-repeated exposure : No data available
Aspiration toxicity : No data available

12. ECOLOGICAL INFORMATION

Product AS SOLD Ecotoxicity

Environmental Effects : Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Product

Toxicity to fish : No data available
Toxicity to daphnia and other aquatic invertebrates : No data available
Toxicity to algae : No data available

Ingredients

Toxicity to fish : Quaternary ammonium compounds, di-C8-10-alkyldimethyl, chlorides
96 h LC50 Fish: 1 mg/l

ethanol
96 h LC50 Pimephales promelas: > 100 mg/l

Ingredients

Toxicity to daphnia and other aquatic invertebrates : n-Alkyl (C14 50%; C12 40%; C16 10%) dimethyl benzyl ammonium chloride
48 h EC50 Daphnia magna (Water flea): 0.016 mg/l

Persistence and degradability

Product AS SOLD

Biodegradable/Eliminated from aquatic environment

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

Product AS SOLD

Disposal methods : Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.

The product should not be allowed to enter drains, water courses or the soil.

Disposal considerations : Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-

SAFETY DATA SHEET

KAYQUAT II

use empty containers. Dispose of in accordance with local, state, and federal regulations.

Product AT USE DILUTION

Disposal methods : Diluted product can be flushed to sanitary sewer.

Disposal considerations : Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. Dispose of in accordance with local, state, and federal regulations.

14. TRANSPORT INFORMATION

Product AS SOLD

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (KR_DG)

UN number : 3082
Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class : 9
Packing group : III
Environmentally hazardous : yes
Quaternary ammonium compounds

Sea transport (IMDG/IMO)

UN number : 3082
Description of the goods : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class : 9
Packing group : III
Marine pollutant : yes
Quaternary ammonium compounds

Special precautions for user : None

15. REGULATORY INFORMATION

National regulatory information

Regulation under the Occupational Safety and Health Act

Harmful Substances Prohibited from Manufacturing

Not applicable

Harmful Substances Required Permission for Manufacture

Not applicable

Hazardous substances requiring management

Not applicable

Controlled Substances Subject to Environment Monitoring

Not applicable

Controlled Substances Subject to Health Examination

Not applicable

Substances with Workplace Exposure Limits

ethanol

Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

Toxic Chemicals

| Chemical name | CAS-No. | NIER No. | Threshold limits |
|---------------|---------|----------|------------------|
|---------------|---------|----------|------------------|

SAFETY DATA SHEET

KAYQUAT II

n-Alkyl (C14 50%; C12 40%; C16 10%)
dimethyl benzyl ammonium chloride

68424-85-1

97-1-200

>= 1

Restricted Chemicals

Not applicable

Prohibited Chemicals

Not applicable

Toxic Release Inventory

Not applicable

Accident Precaution Chemicals

Not applicable

Dangerous Substances Safety Management Act

Not Applicable to Dangerous Materials

Waste Control Act

Industrial waste

The ingredients of this product are reported in the following inventories:

United States TSCA Inventory :

On TSCA Inventory

Canadian Domestic Substances List (DSL) :

All components of this product are on the Canadian DSL

Australia Inventory of Chemical Substances (AICS) :

On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemical Substances :

On the inventory, or in compliance with the inventory

Japan. ENCS - Existing and New Chemical Substances Inventory :

not determined

Korea. Korean Existing Chemicals Inventory (KECI) :

On the inventory, or in compliance with the inventory

Philippines Inventory of Chemicals and Chemical Substances (PICCS) :

On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances in China (IECSC) :

On the inventory, or in compliance with the inventory

Taiwan Chemical Substance Inventory :

not determined

16. OTHER INFORMATION

Sources of key data used to compile the Safety Data Sheet
Globally Harmonized System of Classification and Labeling of Chemicals (GHS)
IARC: (International Agency for Research on Cancer)
US. National Toxicology Program (NTP) Report on Carcinogens
ECHA List of Publishable Substances Registered
EU HPVCs (High Production Volume Chemicals)

Issuing date : 10.10.2017

SAFETY DATA SHEET

KAYQUAT II

Date of first issue : 10.05.2013
Version : 1.1
Prepared by : Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.