SAFETY DATA SHEET

In compliance with EC Regulations No.: 1907/2006, 830/2015 and 1272/2008 (CLP).

Date last modified: 2 March 2018 - version 4.0

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

1.1 Product Identifier

Product Name: OPTITREAT
Product Code: 673018 (30 L)

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

Intended Use: Industrial applications; used for boiler water treatment.

Uses advised against: This product is not recommended for any industrial, professional or consumer use other than the Intended Uses above and the instructions written in this Safety Data Sheet.

1.3 Details of the supplier of the safety data sheet

Company/undertaking identification

Supplier/Manufacturer:

Company:
Marichem Marigases Hellas SA
Sfaktirias 64,
185 45 Piraeus,
Greece
Tel. No.: ++30 210 4148800
Fax No.: ++30 210 4133985
e-mail: mail@marichem-marigases.com
http://www.marichem-marigases.com

e-mail: mail@marichem-marigases.com

1.4 Emergency telephone number

Tel. No.: ++30 210 4148800 (including working hours)

Emergency Information:
Inside U.S. and Canada: (800)-424-9300 (CHEMTREC)
Outside U.S. and Canada: 1-703-527-3887 (CHEMTREC)
National Emergency Centre (Greece): ++30 210 7793777

2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture

Classification under Regulation (EC) No 1272/2008 - Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Information on the hazard

Acute Toxicity, category 5 (oral)
Acute Toxicity, category 5 (dermal)
Specific target organ toxicity (STOT) — single exposure, category 3 (irritant to the respiratory tract)
Skin corrosion/irritation, category 1B
Serious damage to eyes/eye irritation, category 1

SIGNAL WORD: DANGER

Hazard statements:

H314 Causes severe skin burns and eye damage
H302 Harmful if swallowed
H335 May cause respiratory irritation

2.2 Label elements

Labelling under GHS (1272/2008/EC)

SYMBOL:

SIGNAL WORD: DANGER

Hazard statements:

H314 Causes severe skin burns and eye damage.
H302 Harmful if swallowed.
H335 May cause respiratory irritation.

Precautionary statements:

Prevention:

P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P271 – Use only outdoors or in a well-ventilated area.
P260 – Do not breathe dust/gas/spray/vapours.
P264 – Wash with water and soap thoroughly after handling.
P270 – Do no eat, drink or smoke when using this product.
P233 – Keep container tightly closed.

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.
P310 Immediately call a POISON CENTER or a doctor.
P304 + P340 IF INHALED: Remove patient to fresh air and keep comfortable for breathing.

P303 + P361 + P352 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.
Wash with plenty of soap and water.
P361 Remove/Take off immediately all contaminated clothing.
P301 + P330 IF SWALLOWED: Rinse mouth.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.
P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal:

P501 Dispose of contents/container to hazardous or special waste collection sites.

2.3 Other hazards

Does not meet the criteria for PBT or vPvB.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical Composition:

Ingredients	CAS Number	Proportion	Hazard codes*
2-diethylaminoethanol	100-37-8	1% - 10%	H226; H302; H311; H314; H331; H335.
Tetrapotassium pyrophosphate	7320-34-5	1% - 10%	H319
Potassium hydroxide	1310-58-3	1% - 10%	H302; H314; H290.
Substances which do not contribute to the classification of the product	-	70% - 97%	-

* Please refer to Chapter 16 of this SDS for a complete list of the Hazard Codes.

Workplace Exposure Limits, if available, are cited in Chapter 8.

4. FIRST AID

4.1 Description of first aid measures

Remove immediately contaminated clothing. If there is risk that the patient loses consciousness, place in resuscitation position and transport in the same way.
Perform CRP, if necessary. First aid staff should also take care of their own safety.

If inhaled:
Make sure that you keep the patient calm, move the patient to fresh air and seek medical treatment. Inhale immediately a corticosteroid dose in the form of aerosol.

If on skin:
Wash immediately skin with plenty of water, place sterile gauge dressing and seek advice by an expert dermatologist.

In in eyes:
Flush affected eyes immediately by thoroughly rinsing with running water for at least 15 minutes, keeping the eyelids widely open, and seek advice by an expert ophthalmologist.

If swallowed:
Wash out mouth with water and drink 200 - 300 ml of water. Seek medical advice.

4.2 Most important symptoms and effects, acute or delayed ones

Symptoms: Excessive exposure may cause: vomit, nausea.

4.3 Indications of immediate medical attention and special treatment needed:

Treatment: Symptomatic treatment should be provided (sterilisation, vital functions), no specific antidote is known. Protection against pulmonary oedema. Medical supervision for at least 24 hours.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media
Appropriate extinguishing media: water spray, dry powder, foam.

5.2. Special hazards arising from the substance or mixture
nitrogen oxides, carbon oxides.
The above mentioned subtances/ groups of substances may be released in case of fire. Under certain conditions, in case of fire, hazardous combustion products may be released.

5.3. Recommendations for firefighters
Special protection equipment:
Wear self-contained breathing apparatus and chemical protection clothing.
Additional information:

Fire residues and contaminated fire-extinguishing water should be disposed of according to the official regulations.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Respiratory protection is needed. Avoid contact with skin, eyes and clothing.

6.2. Environmental precautions
Do not dispose of in sewers/surface waters/groundwater reservoirs.

6.3. Methods and materials for containment and cleaning
For small quantities: Collect with an absorbing material (e.g. sand, saw dust, universal absorbing means).
For large quantities: Pump the product.
Cleaning work should be carried out only using a breathing apparatus.
Wash out contaminated floors and objects thoroughly with water and detergent, in compliance with environmental regulations. Collect waste in appropriate containers that can be marked and sealed. Incinerate or transport to a dedicated disposal site according to local authority regulations.

6.4. Reference to other sections
Information on exposure control/staff protection and disposal
is provided in chapters 8 and 13.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling
Make sure that the warehouses and workplaces are well ventilated. Handling should be made in accordance with good industrial health and safety practices. Do not eat, drink or smoke when using this product. Wash hands and/or face before breaks and at the end of the shift.

Protection against fire and explosion:
Vapours may be inflammable, if mixed with air. Avoid electrostatic charging - ignition sources should be kept at a rather long distance - fire-extinguishers must be stand-by at a short distance.

7.2. Conditions for safe storage, any incompatible included
Keep separate from acids and substances that form acids.
Suitable materials for containers: carbon steel (iron), Stainless steel 1.4401, Stainless steel 1.4301 (V2), High Density Polyethylene (HDPE), glass, Low Density Polyethylene (LDPE).
Additional information on storage conditions: Containers must be stored tightly closed at a dry place.

8. EXPOSURE CONTROL/ PERSONAL PROTECTION

8.1 Control parameters

Name of Substance: 2-diethylaminoethanol

Ingredients with occupational exposure limits
100-37-8: 2-diethylaminoethanol
TWA value 50 mg/m3 ; 10 ppm (OEL (GR))
Effect on skin (OEL (GR))
The substance can be absorbed through the skin.

PNEC (Predicted No-Effect Concentration)

fresh water: 0.044 mg/l
sea water: 0.0044 mg/l
sporadic release: 4.40 mg/l
precipitate (fresh water): 0.475 mg/l
precipitate (sea water): 0.0475 mg/l
soil: 0.069 mg/kg
treatment unit: 10 mg/l
oral use (secondary poisoning):
No risk is predicted according to the EU risk assessment

DNEL (Derived No-Effect Level)

employee:
Long-term exposure - local effects, Inhalation: 24 mg/m^3
employee:
Short-term exposure - local effects, Inhalation: 24 mg/m^3

Name of Substance: Tetrapotassium pyrophosphate

Ingredients with workplace limits that must be observed:
not relevant

D N E L s
By inhalation General population 0.68 mg/m^3 (long-term exposure, systemic effects)
Worker 2.79 mg/m^3 (long-term exposure, systemic effects)

P N E C s
Sewage treatment 50 mg/L (sewage-treatment plant)
Water 0.05 mg/L (fresh water)
0.005 mg/L (sea water)

Additional indications: Based on the applicable preparation lists.

Name of Substance: Potassium hydroxide

VLA-EC: 2 mg/m^3 (INSHT, country of origin : Spain)
TLV-STEL: 2 mg/m^3 (ACGIH).
WEL- Type of limit value: - Short-term exposure workplace limit: 2 mg/m^3 (country of origin : United Kingdom)

Human exposure:
For workers:
DNEL (local effect): 1 mg/m^3 (when inhaled: long-term toxicity)
For consumers:
DNEL (local effect): 1 mg/m^3 (when inhaled: long-term toxicity)

8.2 Exposure controls

Personal protective equipment

Respiratory protection:
Respiratory protection in case of vapour/aerosol release. Gas filter EN 141 Type A for organic compound gases/ vapours (boiling point >65 °C).
Suitable respiratory protection for higher concentrations or long-term effect.
Self-contained breathing apparatus.

Hand Protection:
Chemical protection gloves (EN 374)
Suitable materials also for prolonged, direct contact (Recommended: Protection factor 6, correspondence >480 minutes of filtration time, in accordance with EN 374):
nitrile rubber (NBR) – coating width 0.4 mm butyl rubber – coating width 0.7 mm fluoroelastomer (FKM) – coating width 0.7 mm.
The manufacturer's instructions for use should be complied with because of the large variety of types.
Additional note: Specifications are based on tests, literature data and information from glove manufacturers or have resulted *mutatis mutandis* from similar substances. Because of the many different conditions (e.g. temperature), it should be considered that, in practice, the term of use of the chemical protection gloves could be much shorter than the dialysis time determined by tests.

Eye Protection:
Tight safety goggles (cage goggles) (e.g. EN 166) and protection
face-mask.

Body Protection:
Body protection must be selected according to the activity and potential exposure, e.g. apron, protection boots, chemical protection uniform (according to EN 14605 in case of projections or EN 13982 in case of dust).
Body protection must be selected according to the activity and potential exposure, e.g. apron, protection boots, chemical protection uniform (according to EN 14605 in case of projections or EN 13982 in case of dust).

General health and safety measures
Handling must be carried out in accordance with the good industrial health and safety practices. You must wear closed work clothing in addition to the indicated personal protection equipment. Handling must be carried out in accordance with the good industrial health and safety practices. Avoid contact with skin, eyes and clothing. Avoid steam inhalation. Do not eat, drink or smoke when using the product. Wash hands and/or face before breaks and at the end of the shift. Inspect gloves regularly and before every use. Replace them, if necessary (e.g. small holes). Immediately remove all contaminated clothing. Contaminated clothing must be washed before re-use. Work clothing should be stored separately.
Immediately remove all contaminated clothing. Work clothing should be stored separately.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on the basic physical and chemical properties

9.1.1. Appearance

Physical State	**:**	Liquid
Color	**:**	Colorless
Odor	**:**	Odorless

9.1.2. Basic data

Flash Point	**:**	> 61^0 C
Autognition Temperature	**:**	-
Lower Explosion Limit (vol %)	**:**	-
Upper Explosion Limit (vol %)	**:**	-
Vapour Pressure	**:**	< 0.0003 kPa at 200^{o}C
Relative Vapour Density (air=1)	**:**	< 0.01
Specific Gravity (gr/cm^3)	**:**	1.04 - 1.08 at 20 ^{0}C
Solubility In Water	**:**	Completely soluble
pH value	**:**	12.5 – 14.0 at 20^{o}C

9.2 Other information: This Data Sheet contains information that is significant only for the secure use of the product and does not substitute for any technical information or specification of the product.

10. STABILITY AND REACTIVITY

10.1. Reactivity
Does not cause hazardous reactions if kept and handled as recommended/ indicated.
Generation of inflammable gases:
Remarks: Does not generate inflammable gases in the presence of water.

10.2. Chemical stability
The product is stable, if stored and handled as recommended/ indicated.

10.3. Possibility of hazardous reactions
The reaction is exothermal. Reacts with oxidising agents. Reacts with halogenated compounds. Reacts with acids. Reacts with acid Not compatible with acid chlorides.

10.4. Conditions to avoid
Avoid extreme temperature. See SDS section 7 - Handling and storage.

10.5. Incompatible materials
Substances to be avoided:
acid chlorides, acid anhydrides, acids, substances producing acids, oxidising agents

10.6. Hazardous decomposition products
Hazardous degradation products
carbon oxides, nitrogen oxides, nitrous gases

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Name of Substance: 2-diethylaminoethanol

Acute toxicity

Acute toxicity assessment:
Medium toxicity after single digestion. High toxicity following short contact with skin. High toxicity following short inhalation.

Experimental data/ from calculation:
LD50 mouse (oral): approx. 1,320 mg/kg (BASF method)
LC50 mouse (inhalation): approx. 4.6 mg/l 4 h (BASF method)
Vapour was examined.
LD50 guinea pig (skin): approx. 885 mg/kg
Data from literature.

Irritation effect

Assessment of irritation effect:
Corrosive. Destroys skin and eyes. May cause severe damage to the eyes.

Experimental data/ from calculation:
Skin corrosion/ irritation rabbit: Corrosive. (OECD - Guideline 404)
Severe damage to the eyes/ irritation rabbit: Irreversible damage (BASF method):

Respiratory/ skin sensitisation

Experimental data/ from calculation:
Guinea-Pig Maximisation Test (GPMT): Not sensitising.
Data from literature.

Germ cell mutagenicity

Assessment of the mutagenicity capacity:
The substance was not mutagenic in bacteria. The substance was not mutagenic in mammal cell culture. The substance was not mutagenic in a test with mammals.

Experimental data/ from calculation:
Ames-Test
negative (OECD Guideline 471)

Carcinogenicity

Assessment of the carcinogenity capacity:

There are results available from several short-term carcinogenicity studies and short term tests. Taking into account all information, there are no indications that the ingredient is carcinogenic per se. A long-term carcinogenicity study that does not meet the applicable requirements showed no carcinogenic effect.

Reproductive toxicity

Assessment of the reproductive toxicity:
Repeated oral intake of the substance caused no damage to reproductive organs. Repeated inhalation of the substance caused no damage to reproductive organs.

Reproduction toxicity

Assessment of the teratogenicity capacity:
There were no indications of reproduction toxicity/ teratogenicity effect in studies with animals.

STOT-single exposure

Assessment of STOT single exposure:
The information available is not sufficient to make an assessment.

Repeated dosing toxicity and STOT-repeated exposure

Assessment of repeated dosing toxicity:
Following repeated dosing, the main effect is local irritation.

Aspiration hazard

No aspiration hazard is expected.

Name of Substance: Tetrapotassium pyrophosphate

Oral LD50 > 2000 mg/kg (mouse)
Skin LD50 > 7940 mg/kg (rabbit)

Initial irritation effect:
on skin: Causes no irritation.
on eye: Causes serious eye irritation.

Additional toxicological information:
The substance is authorised for use in food additives in accordance with EU Regulation 1129/2011.

Sensitisation No sensitisation is known.

Repeated dosing toxicity There is no other available information.

CMR (carcinogenicity, mutagenicity and reproductive toxicity) effect
There is no other relevant information available.

Name of Substance: Potassium hydroxide

11.2.1. LD50 oral (lethal dose 50%)	333-388 mg/kg BC (male mouse) (Method equivalent to OECD 425) (Bruce RD, 1987) Acute toxicity: Category 4, Harmful if swallowed.
11.2.2. LD50 skin (lethal dose 50%)	No skin toxicity studies are considered as necessary, since the substance is classified as corrosive to skin.
11.2.3. CL50 inhalation (lethal concentration 50%)	No acute toxicity studies are considered as necessary, since the substance is classified as corrosive to skin.
11.2.4. Skin corrosion/ irritation	Corrosive to the skin. Category 1A : Causes severe skin burns and eye damage. Results of various *in vitro/ in vivo* studies (rabbit, guinea pig)
11.2.5. Serious eye damage/ irritation	Corrosive category 1A: Causes severe skin burns and eye damage. Results of various *in vitro/ in vivo* studies (rabbit, guinea pig) (Method equivalent to OECD 405) (Johnson GT et al., 1975)
11.2.6 STOT - single exposure	There are no available data.

Sensitisation

Respiratory sensitisation: There are no available data.
Skin sensitisation: Not sensitising (male, guinea pig) (Johnson GT et al., 1975).

Repeated dosing toxicity

STOT - repeated exposure:
No systematic presence of KOH in the body is expected under normal conditions of use and handling, since it is rapidly dissolved and OH- ions are neutralised by the mechanisms of the body.
No *in vivo* tests are carried out for concentrations causing corrosion.

Carcinogenicity
In vivo and *in vitro* mutagenicity studies generate negative results.
No presence of systematic carcinogenicity caused by the KOH in the body is expected under normal conditions of use and handling and, hence, no systematic carcinogenicity is expected.

Germ cell mutagenicity
In vitro studies generate negative results relating to mutation in bacteria (Test Ames).
In vivo studies carried out by use of sodium hydroxide have not shown signs of mutagenic effect.
Reproductive toxicity:
No systematic presence of KOH in the body is expected under normal conditions of use and handling and, hence, the substance will not reach the embryo or the reproductive organs of males or females.

Reproductive toxicity - effects on breast-feeding or via breast-feeding
There are no available data.

Aspiration hazard

There is no available data.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Name of Substance: 2-diethylaminoethanol

Assessment of toxicity in aquatic environment
Acute harmful effect on aquatic organisms. Is not expected to suspend the degradation capacity of activated sludge when inserted in biological treatment facilities in very low concentrations.

Fish toxicity:
LC50 (96 h) 147 mg/l, Leuciscus idus (DIN 38412 Part 15, static)
Nominal concentration. The product will change the pH value of the system tested. The result refers to a non-neutralised sample. Upon neutralisation, it is no longer toxic.

Aquatic invertebrates:
EC50 (48 h) 83.6 mg/l, Daphnia magna (Directive 79/831/EEC)
Nominal concentration. The product will change the pH value of the system tested. The result refers to a non-neutralised sample.

EC50 (48 h) 165 mg/l, Daphnia magna (OECD Guideline 202, part 1)
The details of the toxic effect are related to nominal concentration. The product will change the pH value of the system tested. The result refers to a neutralised sample.

Aquatic plants:
EC50 (72 h) 44 mg/l (growth rate), Scenedesmus subspicatus (DIN 38412 Part 9)
Nominal concentration.
NOEC (72 h) 5 mg/l (growth rate), Scenedesmus subspicatus (DIN 38412 Part 9)
Nominal concentration.

Microorganisms/Effect on activated sludge:
EC20 (30 min) > 1,000 mg/l, activated sludge, urban origin (OECD - Guideline 209, aquatic).
Nominal concentration.

Chronic fish toxicity:
The conduct of a study is not scientifically justified.

Chronic toxicity to aquatic invertebrates:
The conduct of a study is not scientifically justified.

Assessment of the terrestrial toxicity:
The conduct of a study is not scientifically justified.

Name of Substance: Tetrapotassium pyrophosphate

LC50 > 750 mg/L (Leuciscus idus)
LC50 (48 h) > 100 mg/L (daphnia magna) (OECD 202)
LC50 (96 h) > 100 mg/L (Onchorhynchus mykiss)

Name of Substance: Potassium hydroxide

The hazard posed by the potassium hydroxide to the environment is caused by the hydroxyl ion (effect on pH). For that reason, its toxicity will depend on the buffer ability of the environment.

Acute toxicity to fish

LC50 (lethal dose 50%)	KOH is a strongly alkaline substance that is fully dissolved when in contact with water. Its effect on pH does not enable the conduct of tests.

Chronic toxicity to fish

NOEC (no observed effect concentration)	It is not necessary to carry out that study since the substance is decomposed in water and its effect on the pH does not change the environmentally expected range.
EC50 (lethal dose 50%)	It is not necessary to carry out that study since the substance is decomposed in water and its effect on the pH does not change the environmentally expected range.

Chronic toxicity to crustaceans

NOEC (effective concentration 50%)	It is not necessary to carry out that study since the substance is decomposed in water and its effect on the pH does not change the environmentally expected range.

Acute toxicity to seaweeds and other aquatic plants

EC50 (effective concentration 50%)	It is not necessary to carry out that study since the substance is decomposed in water and its effect on the pH does not change the environmentally expected range.

Toxicity data as regards soil-dwelling micro- and macro-organisms and other environmentally sensitive organisms, such as bees, birds and plants.

The presence of the substance in the soil particulates is negligible due to its high solubility and low log Kow. No significant emissions to the terrestrial environment are expected under normal conditions of use and handling.

12.2 Persistence and degradability

Name of Substance: 2-diethylaminoethanol

Assessment of biodegradability and elimination (H_2O):
Easily degradable (according to the OECD criteria).

Information on extinction:
90 - 100 % Reduction of DOC (22 d) (OECD 301 A (new Edition)) (aerobic, activated sludge, urban origin)

Assessment of stability in water:
According to the structural properties, hydrolysis is not expected/possible.

Name of Substance: Potassium hydroxide

Easily biodegradable.	Not applicable (the substance is inorganic).
Other relevant information.	Anaerobic decomposition: KOH is a strongly alkaline substance that is fully decomposed in water into K^+ and OH^-. Its high water solubility and low vapour pressure shown that it is mainly encountered in aquatic environment. This means that it is not absorbed by soil particulates or surfaces. Air emissions, such as aerosols, are quickly neutralised by carbon dioxide, while salts are washed out by rain.

12.3. Bio accumulative potential

Assessement of bio accummulative potential:
Not significantly accummulated in organisms.
Bio accumulative potential:
Bio accummulation factor: < 6.1 (28 d), Cyprinus carpio (OECD Guideline 305 C)
Data from literature.

12.4 Mobility in soil

Assessment of risk of transfer between environmental compartments:
volatility: The product will not be evaporated in the atmosphere from water surface.
Soil adsorption: No adsorption in the solid phase of the soil is expected.

12.5 Results of PBT and vPvB assessment

12.5. Results of PBT (persistence, bioaccummulation and toxicity) and vPvB (very persistent and very bioaccummulative) assessment
Assessment of persistence (P):
The product is rapidly dissolved and decomposed in water and, hence, does not meet the persistence criterion.
Assessment of bioaccummulation (B):
Not relevant. The product does not meet the bioaccummulation criterion.
Assessment of toxicity (T):
Despite the fact that the LC50 values for aquatic organisms cannot be calculated, the lowest LC50 value known for organisms in fresh and sea water shows that they are above the limit value of 0.1 mg/L. Therefore, the product does not meet the toxicity criterion.
This product does not meet the criteria of designation as a PBT or vPvB product.

12.6 Other adverse effects

Not expected.

12.7. Additional information

Other ecotoxicological advice:
Due to the pH value of the product, it should be generally neutralised before waste disposal to treatment facilities.

13. DISPOSAL INFORMATION (ELIMINATION)

13.1. Waste treatment methods

Incinerate in appropriate incineration facility in accordance with local authorities' regulations.
No waste code can be assigned in accordance with the European Waste Catalogue (EWC), due to dependence on the use.
The waste code according to the European Waste Catalogue (EWC) must be assigned in collaboration with the disposal company/ manufacturer/ authorities.

13.2 Disposal of contaminated packaging

Contaminated packaging:
Contaminated packaging must be emptied to the best possible extent. Then, it can be given for recycling, after carefully cleaned.

14. TRANSPORTATION INFORMATION

14.1 PROPER SHIPPING NAME: CORROSIVE LIQUID, N.O.S. (Potassium Hydroxide, Diethylethanolamine)

14.2 Land transport
UN number 1760
ADR 8 (Corrosive)
RID 8 (Corrosive)
Packing group: III
Subsidiary Risk Label: None

14.3 Sea transport
UN number: 1760
IMDG class: 8 (Corrosive) IMDG packing group: III
Subsidiary Risk Label: None

14.4 Air transport
UN number: 1760
IATA/ICAO class: 8 Packing group: III
Subsidiary Risk Label: None

14.5 Transportation information (as indicated on the label)

1. UN Number: 1760
2. Proper Shipping Name: CORROSIVE LIQUID, TOXIC N.O.S. (Potassium Hydroxide, Diethylethanolamine)
3. Dangerous Substances: Potassium Hydroxide, Diethylethanolamine
4. Packing Group: PG III
5. Label / Class: 8 (CORROSIVE)
6. Subsidiary Risk Label: None
7. Flash Point: Not Applicable

15. REGULATORY INFORMATION

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

If other regulatory information applies that is not already provided elsewhere in this safety data
sheet, then it is described in this subsection.

15.2 Chemical Safety Assessment

A CSA has been carried out for the raw materials in this product, from the raw materials manufacturers (when needed to be carried out).

16. OTHER INFORMATION

16.1 Full text of Hazard Code(s) referred in Section 3

H226: Flammable liquid and vapour.
H290: May be corrosive to metals.
H302: Harmful if swallowed.
H311: Toxic in contact with skin.
H314: Causes severe skin burns and eye damage.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.
H335: May cause respiratory irritation

16.2 Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail).
IMDG: International Maritime Code for Dangerous Goods.
IATA: International Air Transport Association.
ICAO: International Civil Aviation Organization.
bw: Body weight.
Carc.: Carcinogenicity.
CAS number: Chemical Abstracts Service number.
CLP: Classification Labelling Packaging Regulation.
CSA: Chemical Safety Assessment.
CSR: Chemical Safety Report.
DNEL: Derived No Effect Level.
dw: Dry weight.
EC number: EINECS and ELINCS number.
EC: European Commission.
EC50: Half maximal effective concentration.
EINECS: European Inventory of Existing Commercial Chemical Substances.
ELINCS: European List of Notified Chemical Substances.
EmS: Emergency Schedule.
ERC: Environmental Release Category.
ES: Exposure scenario.
food: oral feed.
GHS: Globally Harmonized System of Classification and Labelling of Chemicals.
Irrit.: Irritation.
LC50: Lethal concentration, 50 %.
LD50: Median Lethal dose.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
MK value: Maximum Concentration value.
NCO: An international corporation that provides customer service contracting.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.

OECD: Organisation for Economic Cooperation and Development.
PBT: Persistent, Bioaccumulative and Toxic.
PNEC: Predicted No Effect Concentration.
PROC: Process category.
REACH: The Registration, Evaluation, Authorisation and Restriction of Chemicals.
Resp.: Respiratory.
Sens.: Sensitization.
STEL value: Short Term Exposure Limit value.
STOT RE: Specific target organ toxicity — repeated exposure.
STOT SE: Specific target organ toxicity — single exposure.
STOT: Specific Target Organ Toxicity.
STP: Sewage Treatment Plant.
SU: Sector of use.
Tox.: Toxicity.
TWA value: Time Weighted Average value.
vPvB: Very Persistent and Very Bioaccumulative.

16.3 Notice to reader

All information, instructions and statements contained in this Material Safety Data Sheet are compiled in accordance with European Directives, corresponding national legislation and on the basis of information given by our suppliers.
The information disclosed in this Material Safety Data Sheet (which supersedes all previous versions) is believed to be correct, at the date of issue, to the best of our current knowledge and experience. It only relates to the specific product designated herein and it may not be valid when said product is used in combination with any other products or in any processed form, unless specified in the text. This document aims to provide the necessary health and safety information of the product and is not to be considered a warranty or quality specification. It is the responsibility of the recipient of this Material Safety Data Sheet to ensure that information given here is read and understood by all who use, handle, dispose of or in any way come in contact with the product.
Also, it is the responsibility of the user to comply with local legislation relating to safety, health, environment and waste management. Data and information provided concerning the product are informative, exclusively presented to the customer.