



SAFETY DATA SHEET

In compliance with EC Regulations No.: 1907/2006 and 453/2010.

Date last modified: 22 December 2014 - Version 5.0

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

1.1 Product Identifier

Product Name: MARICHEM PCS

Product Code #: 833037 (30 lt), 832138 (210 lt)

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

Intended Use: Industrial applications; Cleaning agent for cargo holds and tanks.

Uses advised against: This product is not recommended for any industrial, professional or consumer use other than the Intended Uses above.

1.3 Details of the supplier of the safety data sheet

Company/undertaking identification

Supplier/Manufacturer:

Marichem Marigases Hellas SA

Sfaktirias 64,

185 45 Piraeus,

Greece

Tel. No.: ++30 210 4148800

Fax No.: ++30 210 4133985

<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 EC 1272/2008 regulation - GHS classification.

Skin Corrosion: category 1B

Aquatic Chronic: category 2

SIGNAL WORD: DANGER



Hazard Statement(s):

H314 Causes severe skin burns and eye damage.

H411 Toxic to aquatic life with long lasting effects.

Supplementary Hazard Statement(s):

EUH031 Contact with acids liberates toxic gas.

Classification under Directives 67/548/EEC, 1999/45/EC and their amendments.

The preparation is classified as dangerous.

Contact with acids liberates toxic gas. Causes burns.

Clear light yellow liquid, with mild chlorine scent.

2.2 Label Elements

Labelling according to GHS (1272/2008/EC)

SYMBOL:



GHS05 GHS09

SIGNAL WORD: DANGER

Hazard Statement(s):

H314 Causes severe skin burns and eye damage.

H411 Toxic to aquatic life with long lasting effects.

Supplementary Hazard Statement(s):

EUH031 Contact with acids liberates toxic gas.

Precautionary Statement(s):

Prevention:

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363 Wash contaminated clothing before re-use.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P310 Immediately call a POISON CENTER or doctor/physician.

P321 Specific treatment (see First Aid Measures on Safety Data Sheet).

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Product classification and labelling according to Directive 67/548/EEC, European Dangerous Preparations Directive (1999/45/EC), European Regulation 648/2004 and their amendments.

Symbol: C, Corrosive



C, Corrosive

R-phrases:	31	Contact with acids liberates toxic gas.
	34	Causes burns.
S-phrases:	2	Keep out of the reach of children
	28	After contact with skin wash immediately with plenty of water.
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
	45	In case of accident or if you feel unwell, seek medical advice immediately (<i>show the label where possible</i>).
	50	Do not mix with acids.
	23	Do not breathe gas/vapour.
	38	In case of insufficient ventilation, wear suitable respiratory equipment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical Composition:

Ingredients	CAS Number	Proportion	Hazard Code(s)*
Sodium Hypochlorite solution	7681-52-9	5% - 20%	H314; H411.
Other ingredients that do not contribute to the classification of the product	-	80% - 90%	-

*See section 16 for the full text of the Hazard Code(s) declared above.

Occupational Exposure Limits, if available, are listed in section 8.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General information

Speed is essential.

Immediately remove any clothing soiled by the product.

After inhalation

Take affected persons into fresh air.

Use a respiratory bag or breathing device.

Call a doctor immediately.

Seek medical treatment in case of complaints.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact

Seek immediate medical advice.

Seek medical treatment.

Immediately wash with water and soap and rinse thoroughly.

After eye contact

Call a doctor immediately.

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing

Rinse mouth out with water.

Seek medical treatment.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing agents: Water haze.

5.2 Special hazards arising from the substance or mixture

No further relevant information available.

5.3 Advice for fire-fighters

Approach fire from upwind to avoid hazardous vapors.

Do not attempt to fight the fire without suitable protective equipment:

- Complete protective clothing.
- Self-contained breathing apparatus.

Cool down the containers/equipment exposed to heat with a water spray.

Isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

Protective equipment

Wear fully protective suit for fire fighting (clothes, helmets, boots, gloves) conforming to European standard EN 469.

Mouth respiratory protective device.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation

Wear protective clothing.

Do not breathe vapors.

Avoid any direct contact with the product.

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions

Prevent from spreading.

Dilute with plenty of water.

Do not allow to enter sewers/surface or ground water.

6.3 Methods and material for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid any direct contact with the product.
Keep receptacles tightly sealed.
Keep away from heat and direct sunlight.
Store in cool, dry place in tightly closed receptacles.
Use only in well ventilated areas.

Information about fire - and explosion protection

No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Requirements to be met by storerooms and receptacles

Suitable materials for storage: Vulcanised or rubber coated steel, Polyethylene, Reinforced polyester.
Unsuitable material for receptacle: aluminium.
Unsuitable material for receptacle: steel.
Incompatible materials of packing: galvanized steel, alloys of aluminium and copper.
Store between: 15 to 25 °C.
Prevent any seepage into the ground.
Provide alkali-resistant floor.

Information about storage in one common storage facility

Do not store near combustible materials.
Keep away from:
Ammonia
Do not store together with acids.

Further information about storage conditions

Protect from exposure to the light.
Protect from humidity and water.
Keep container tightly sealed.

7.3 Specific end use(s)

Cleaning product for industrial use only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

EXPOSURE LIMITS

OSHA: 2 mg/m³ Ceiling (based on irritation effects)
ACGIH: 2 mg/m³ Ceiling

Immediately Dangerous to Life or Health
IDLH : 10 mg/m³

Ingredients with limit values that require monitoring at the workplace

Not required.

DNEL (Derived No-Effect Level)/DMEL (Derived Minimal Effect Level)

Workers exposure:

DNEL inhalation, long term exposure: 1.55 mg/m³

DNEL inhalation, short term exposure: 3.1 mg/m³

DNEL dermal exposure, long term exposure: 0.5 % in mixture (weight basis)

General population:

DNEL inhalation, long term exposure: 1.55 mg/m³

DNEL inhalation, short term exposure: 3.1 mg/m³

DNEL dermal exposure, long term exposure: 0.5 % in mixture (weight basis)

DNEL oral, long term exposure: 0.26 mg/kg bw/day

PNEC - (Predicted No-Effect Concentration)

PNEC fresh water: 0.21 mg/L

PNEC marine water: 0.042 mg/L

PNEC intermittent releases: 0.26 mg/L

PNEC oral: 11.1 mg/kg food

PNEC STP: 0.03 mg/L

8.2 Exposure controls

Personal protective equipment

General protective and hygienic measures

Do not eat, drink, smoke or sniff while working.

Ensure that washing facilities are available at the work place.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Respiratory protection: Use suitable respiratory protective device in case of insufficient ventilation.

Protection of hands

Protective gloves

The glove material has to be impermeable and resistant to the product.

Due to missing tests no recommendation to the glove material can be given for the product.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves

Gloves from PVC.

Recommended thickness of the material: > 1.2 mm

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection

Safety glasses

Tightly sealed goggles

Body protection

Alkaline resistant protective clothing

Acid-resistant boots.

Acid-resistant clothing (EN 14605).

Use protective suit.

Risk management measures

Ensure good ventilation of the work station.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

9.1.1. Appearance

Physical State:	Liquid
Color:	Light yellow
Odor:	Chlorine-like

9.1.2. Basic data

Boiling Point/Boiling Range:	>60°C
Melting Point/Melting Range:	-28.9°C
Solubility in water:	Complete soluble.
Flash Point:	Not Applicable.
Autoignition Temperature:	None
Lower Explosion Limit (vol %):	Not Applicable.
Upper Explosion Limit (vol %):	Not Applicable.
Vapour Pressure:	25 hPa at 20°C
Relative vapor density (air=1):	Not available.
Specific gravity:	1.1 - 1.2 gr/cm ³ at 20°C
pH:	11.5-12.5

Dynamic Viscosity: 2.8 mPas

Partition coefficient (n-octanol/water) at 20 °C: -3.42 log KOW (estimated by calculation)

9.2. Other information

No further relevant information available.

10. STABILITY AND REACTIVITY

10.1 Reactivity

10.2 Chemical stability

Under normal conditions of use and storage (dry conditions), it is stable.

Thermal decomposition/conditions to be avoided

No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions

Contact with acids releases toxic gases.

10.4 Conditions to avoid

Minimise exposure to air and moisture.

Heat.

10.5 Incompatible materials:

Strong acids.

Combustible materials.

Metals.

10.6 Hazardous decomposition products:

Chlorine.

Hypochlorous acid.

Sodium chlorate.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD/LC50 values relevant for classification:

Oral LD50 1100 mg/kg (rat) (standard acute method)

Dermal LD50 20000 mg/kg (rabbit) (standard acute method)

Inhalative LC50/4 h >10.5 mg/l (rat) (acute toxic class method)

Primary irritant effect

on the skin: Caustic effect on skin and mucous membranes.

on the eye: Strong caustic effect.

Sensitization: No sensitizing effects known.

Additional toxicological information:

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of oesophagus and stomach.

Toxicokinetics, metabolism and distribution Not classified.

Sensitisation Not sensitising.

Repeated dose toxicity

Not classified.

NOAEL = 50 mg/kg bw/day

CMR effects (carcinogenic, mutagenic or toxic for reproduction)

Product components are not carcinogenic, mutagenic or toxic for reproduction.

Product components are not listed on the IARC, NTP or OSHA carcinogens lists.

12. ECOLOGICAL INFORMATION

12.1 Toxicity**Aquatic toxicity**

EC10 0.0021 mg/l (freshwater algae)

0.04 mg/l (mf)

LC50 0.1 mg/l (Fp)

0.141 mg/l (daphnia)

0.035 mg/l (freshwater invertebrates)

0.06 mg/l (freshwater fish)

0.026 mg/l (mi)

12.2 Persistence and degradability

Not relevant for inorganic mixtures.

12.3 Bioaccumulative potential

This product reacts instantly with organic matter and every oxidizable material. Therefore no bioaccumulation testing according to Annex IX, 9.3.2. is technically feasible. In addition, according to the hypothesised $\log K_{ow} = -3.42$ no bioaccumulation is expected.

12.4 Mobility in soil

No further relevant information available.

Additional ecological information:**General notes:**

Do not allow product to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects

No further relevant information available.

The product is not harmful to the marine environment as per paragraphs 1.7.4 and 1.7.5. of Resolution MEPC. 219 (63) /Annex 24 - 2012 adoption of IMO's MARPOL Annex V.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Disposal of product: Dilute with water.

Neutralize contaminated water with a sodium thiosulphate solution.

Recover waste water for processing later.

Disposal of packaging: Clean container with water. Recover waste water for processing later.

Uncleaned packaging

Recommendation

Disposal must be made according to official regulations.

Recommended cleansing agents

Water, if necessary together with cleansing agents.

14. TRANSPORT INFORMATION

14.1 Proper Shipping Name: Sodium Hypochlorite, Solution

14.2 LAND TRANSPORT

UN number:	1791	RID-class:	8
ADR class:	8		

14.3 SEA TRANSPORT

UN number:	1791	EmS:	F-A, S-B
IMDG class:	8		
IMDG packing group:	II		

14.4 AIR TRANSPORT

UN number:	1791		
IATA/ICAO class:	8	Packing group:	II

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

H314: Causes severe skin burns and eye damage.

H411: Toxic to aquatic life with long lasting effects.

Full text of Supplementary Hazard Statement(s) referred in Section 2

EUH031: Contact with acids liberates toxic gas.

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.