SAFETY DATA SHEET

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

Date last modified: 18 January 2019 - version 2.0

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

1.1 Product Identifier

Product Name: TANK SHINE CLEANER
Product Code #: 833053 (30L)/832154 (210L)

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

Intended Use: Industrial applications; Cleaning agent for machinery, equipment & 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 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:

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.

Labeling

Symbol : 

Signal Word: DANGER

Skin Corrosion 1B H314 Causes severe burns and eye damage.

2.2 Label Elements

Labelling according to Regulation (EC) No. 1272/2008.
The substance is classified and labelled according to the CLP Regulation.

Hazard Pictograms

GHS05

Signal Word: DANGER

Hazard Statements
H314: Causes severe burns and eye damage.

Precautionary Statements

Prevention:
P260: Do not breathe fume/gas/mist/vapours/spray.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P284: Wear respiratory protection.

Response:
P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P301 + P330 + P331: IF SWALLOWED: rinse mouth. DO NOT induce vomiting.
P391 Collect spillage.

Storage:
P405 Store locked up.

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

2.3 Other Hazards

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

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

Risk (R) - phrases:

R34 Causes burns.

Safety (S) - phrases:

S2 Keep out of the reach of children
S26 In case of contact with eyes rinse immediately with plenty of water and seek medical advice.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical Composition:

Ingredients	CAS Number	Proportion	Classification*
Phosphoric Acid (Solution 85%)	7664-38-2	20% - 60%	H314
Components which do not contribute to the classification of the product	-	40% - 80%	-

*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
Do not leave affected persons unattended.
Personal protection for the First Aider.
Involve doctor immediately.
Immediately remove any clothing soiled by the product.
In case of irregular breathing or respiratory arrest provide artificial respiration.
Provide oxygen treatment if affected person has difficulty breathing.

After inhalation
Take affected persons into fresh air and keep quiet.
Supply fresh air.
Call a doctor immediately.

After skin contact
Immediately wash with water and soap and rinse thoroughly.
Call a doctor immediately.

After eye contact
Rinse opened eye for several minutes under running water.
Call a doctor immediately.

After swallowing
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
NOTE: Never give an unconscious person anything to drink.

4.2 Most important symptoms and effects, both acute and delayed
Causes severe skin burns and eye damage.
Gastric or intestinal disorders.

4.3 Indication of any immediate medical attention and special treatment needed
Medical supervision for at least 48 hours.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing agents
The product is not flammable.
Use fire extinguishing methods suitable to surrounding conditions.
CO_2 (Carbon Dioxide), powder or water spray.
Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents
Water with full jet

5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:
Phosphorus oxides (e.g. P_2O_5).

5.3 Advice for fire-fighters

Protective equipment
Wear self-contained respiratory protective device.
Wear fully protective suit.

Additional information
Cool endangered receptacles with water spray.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Mount respiratory protective device.

6.2 Environmental precautions
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 liquid components with liquid-binding material.
Use neutralizing agent.
Dispose contaminated material as waste according to Chapter 13.
Ensure adequate ventilation.

6.4 Reference to other sections
See Chapter 8 for information on personal protection equipment.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
When diluting always pour product into water and not vice versa.

Information about fire - and explosion protection
No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles
Store only in the original receptacle.
Use polyolefin receptacles.
Provide acid-resistant floor.
Suitable material for receptacles and pipes: Stainless steel.

Information about storage in one common storage facility
Store away from reducing agents.
Store away from metals.
Do not store together with alkalis (caustic solutions).

Further information about storage conditions
Keep container tightly sealed.

Recommended storage temperature
<75%: no need in heating

7.3 Specific end use(s)

Cleaning product for industrial use only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace

Name of Substance: Phosphoric Acid

IOELV (EU)	Short term value: 2 mg/m^3
	Long-term value: 1 mg/m^3
PEL (USA)	1 mg/m^3
REL (USA)	Short term value: 3 mg/m^3
	Long-term value: 1 mg/m^3
TLV (USA)	Short term value: 3 mg/m^3
	Long-term value: 1 mg/m^3

DNELs
For workers:
Long-term-local effects (inhalation) DNEL: 1 mg/m³
Acute local effects (inhalation) DNEL: 2 mg/m³
For general population:
Long-term-local effects (inhalation) DNEL: 0.73 mg/m³

PNECs
Not applicable
Phosphoric acid toxicity is related to its acidic nature. A generic PNEC (water) cannot be derived as the effects are highly depending on the pH of the receiving water and its buffer capacity highly variable.

8.2 Exposure controls

General protective and hygienic measures
The usual precautionary measures are to be adhered to when handling chemicals.
Do not eat or drink while working.
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 only when aerosol or mist is formed.
In case of brief exposure or low pollution use respiratory filter device.
In case of intensive or longer exposure use self-contained respiratory protective device.

Short term filter device: ABEK+P
Filter A/P2 (EN 14387, EN 143)

Protection of hands
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Material of gloves
Butyl rubber, BR (0.7 mm)
Nitrile rubber, NBR (0.4 mm)
Chloroprene rubber, CR (0.5 mm)
Fluorocarbon rubber (Viton)
Natural rubber, NR
Neoprene gloves

Penetration time of glove material
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed. (EN 374)

Not suitable are gloves made of the following materials
Leather gloves.

Eye protection
Tightly sealed goggles (EN 166).

Body protection
Acid resistant protective clothing.
Boots.

Limitation and supervision of exposure into the environment
Avoid discharging of phosphoric acid solutions into municipal wastewater, surface water or soils, when such discharges are expected to cause significant pH changes.

Risk management measures
Regular control of the pH value previous to or during discharges into open waters is required. Discharges should be carried out as to minimize pH changes in receiving surface waters. In general most aquatic organisms can tolerate pH values in the range of 6-9.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

9.1.1. Appearance

Physical State:	Liquid
Color:	White

Odor:	Odorless

9.1.2. Basic data

Freezing Point Range:	-17°C – 21°C
Boiling Point Range:	135°C – 158°C at 760mmHg
Solubility in water at 20^{0}C:	> 1000 g/l
Flash Point:	Not Applicable
Decomposition Temperature:	> 200^{0}C
Ignition Temperature:	Not Applicable
Self-igniting:	Product is not self-igniting.
Vapour Pressure:	4 Pa at 20°C
Vapour Density	3.4 (air = 1)
Vapour pressure at 20^0 C:	4 Pa
Specific Gravity:	1.40 gr/cm^3 at 20°C
Viscosity (at 20^{0}C):	1.1 - 600 mPa.s
Segregation coefficient (n-octanol/water):	Not Applicable.
pH Value:	1.5 – 2.0

9.2 Other Information: No further relevant information available.

10. STABILITY AND REACTIVITY

10.1 Reactivity
Corrosive action on metals.
Reacts with reducing agents.
Reacts with alkali (lyes).
Ammonia (NH_3), fluorine, sulphur trioxide (SO_3), phosphorus pentoxide (P_2O_5).

10.2 Chemical stability
No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions
Reacts with metals forming hydrogen.
Reacts with alkali (lyes).

10.4 Conditions to avoid
To avoid thermal decomposition do not overheat.

10.5 Incompatible materials
Alkalis.
Metals.

10.6 Hazardous decomposition products
Phosphorus oxides (e.g. P_2O_5).

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Name of Substance: Phosphoric Acid

Acute toxicity
LD/LC50 values relevant for classification
Oral LD50 2600 mg/kg (rat) (equivalent to OECD 423).

Specific symptoms in biological assay
Phosphoric acid is classified as corrosive to the skin, therefore, no need to perform an acute dermal and an acute inhalative toxicity tests.

Primary irritant effect
on the skin: Caustic effect on skin and mucous membranes.
on the eye: Strong caustic effect.

Sensitization
Phosphoric acid is classified as skin corrosive, thus a further assessment for skin sensitization is not necessary.

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
This substance is not considered to have bioaccumulative potential as it is highly soluble in water and phosphate levels in the body are regulated via homeostasis.
For risk assessment purposes oral absorption is considered to be 50-100%, inhalation absorption 100% and dermal absorption 50-100%.
Wide distribution throughout the body is to be expected and excretion will be predominantly via urine.
Supporting studies show increased phosphorus retention in bone and increased urinary phosphorus excretion after prolonged dietary administration of phosphoric acid and support the initial toxicokinetic assessment.

Repeated dose toxicity
Oral NOAEL 250 mg/kg bw/day (rat) (OECD 422 (subchronic))
should not be classified for STOT - repeated exposure.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Mutagenicity:
None
(acc. to OECD 471, OECD 473, OECD 476 tests)
Carcinogenicity:
no data available
(no carcinogenicity study needs to be performed as this substance is not genotoxic)
Toxicity for reproduction:
no classification is necessary
reproductive toxicity: NOAEL≥500 mg/kg bw/day ; rat; oral (OECD 422)
developmental toxicity: NOAEL≥410 mg/kg bw/day ; rat; oral

maternal toxicity: NOAEL≥410 mg/kg bw/day ; rat; oral (equivalent to OECD 414).

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Name of Substance: Phosphoric Acid

Aquatic toxicity
Phosphoric acid toxicity is related to its acidic nature and, therefore, is more related to concentration than to dose.
EC50/48 h (static) >100 mg/L (Daphnia magna) (OECD 202, freshwater)
EC50/72 h (static) >100 mg/L (algae) (OECD 201, freshwater)
Median lethal pH 96h 3-3,25 (Bluegill fish)
Fish mortality is caused by low pH values.

12.2 Persistence and degradability
The substance is inorganic; therefore no biodegradation tests are applicable.
Phosphoric acid dissociates in water into H3O+, H2PO4–, HPO4- - ions, which cannot be further degraded.

Other information:
The product should not get in high quantities into waste water because it may act as a plant nutrient and cause eutrophication.

12.3 Bioaccumulative potential
Does not accumulate in organisms
This substance is highly water soluble and dissociating.
Phosphoric acid dissociates in water into H3O+, H2PO4–, HPO4- - ions, which are ubiquitous in the environment.
Phosphoric acid is absorbed in form of phosphate anions. This anion is an essential component of the body.

12.4 Mobility in soil
This substance is highly water soluble and dissociating.
When spilled onto soil, phosphoric acid will infiltrate downward and will be partially neutralized by dissolving some of the soil material. On reaching the ground table phosphoric acid will be dispersed and diluted. Therefore, the environmental assessment should be limited to the aquatic compartment.

Behaviour in sewage processing plants:
Phosphoric acid is of low toxicity to microorganisms, since in sewage treatment plants the microorganisms are essentially exposed to mainly $H_2PO_4^-$ and HPO_4^- ions, which are an essential nutrient for them, and not to parent phosphoric acid or to low pH values.

12.5 Results of PBT and vPvB assessment
PBT: No assessment is required for inorganic substances.
vPvB: No assessment is required for inorganic substances.

12.6 Other adverse effects
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

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 must be made according to official regulations.
Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

European waste catalogue
06 01 04* phosphoric and phosphorous acid

Uncleaned packaging

Recommendation:
Empty contaminated packaging thoroughly. They may be recycled after thorough and proper cleaning.
Packaging that may not be cleansed are to be disposed of in the same manner as the product.
Disposal must be made in accordance with Local Authority requirements.

Recommended cleansing agents
Water, if necessary together with cleansing agents.

14. TRANSPORT INFORMATION

14.1 Proper shipping name: PHOSPHORIC ACID, SOLUTION

14.2 LAND TRANSPORT

UN number:	1805	RID-class:	8
ADR class:	8		

14.3 SEA TRANSPORT

UN number:	1805	EmS:	F-A, S-B
IMDG class:	8		
IMDG packing group:	III		

14.4 AIR TRANSPORT

UN number:	1805	IATA/ICAO class:	8
Packing group:	III		

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.

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.