



SAFETY DATA SHEET

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

Date last modified: 27 December 2019 - version 7.0

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

1.1 Product Identifier

Product Name: DESCALER LIQUID 555
Product Code #: 833009 (30 lt)/832109 (210 lt)

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

Intended Use: Product Uses: Industrial applications; Cleaning agent for machinery, equipment & surfaces.

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.

Skin corrosion: category 1B
STOT Single Exp.: category 3

SIGNAL WORD: DANGER



Hazard Statement(s):

H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

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

The preparation is classified as dangerous.
Causes burns. Irritating to respiratory system.
A clear colorless liquid with pungent odor.

2.2 Label Elements

Labelling according to Regulation (EC) No. 1272/2008 - GHS classification.

The substance is classified and labelled according to the CLP Regulation.

Labelling according to GHS (1272/2008/EC)

SYMBOL:



GHS05 GHS07

SIGNAL WORD: DANGER

Hazard Statement(s):

H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Precautionary Statement(s):

Prevention:

P234 Keep only in original container
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.
P284 Wear respiratory 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.
P309+P311 IF exposed or if you feel unwell: 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.

2.3. Other hazards

The substance does not meet the criteria for persistent, bioaccumulation and toxicity (PBT) or the criteria for Very Persistent and Very Bioaccumulative (vPvB) in accordance with Annex XIII of 1907/2006/EC..

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 Phrases

R-Phrases: R34 Causes burns.
 R37 Irritating to respiratory system.

Safety Phrases

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

S23
S38

immediately (show the label where possible).
Do not breathe gas/vapour.
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)*
Hydrochloric Acid	7647-01-0	25% - 40%	H314; H335
Components which do not contribute to the classification of the product	-	> 65%	-

*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 advice

If exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

4.1.1. In case of inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical advice.

4.1.2. In case of skin contact: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Seek medical advice.

4.1.3. In case of eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Eyelids should be held away from the eyeball to ensure thorough rinsing. Always seek medical advice.

4.1.4. In case of ingestion: Only when conscious, rinse mouth. Do NOT induce vomiting. Seek medical advice.

4.1.5. Information to physician: Symptomatic treatment is advised.

4.2. Most important symptoms and effects, both acute and delayed: Irritation of eyes and mucous membranes. Burning sensation in mouth. Severe skin irritation.

4.3. Indication of any immediate medical attention and special treatment needed: Depending on the degree of exposure, periodic medical examination is suggested.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media: All media. Suppress gases/mists with water spray jet.

Unsuitable extinguishing media: None known.

5.2. Special hazards arising from the substance or mixture: Substance itself is not flammable or explosive. The product reacts with metals with evolution of highly flammable hydrogen.

5.3. Advice for fire-fighters Special protective equipment: In case of insufficient ventilation wear suitable respiratory equipment (compressed air breathing).

5.4. Further information: Non-combustible liquid. In case of warming up tanks shall be cooled with sprayed water.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

6.1.1. For non-emergency personnel: Remove not affected people. Inform the relevant authorities.

6.1.2. For emergency responders: Protective clothing and breathing apparatus must be worn.

6.2. Environmental precautions

Avoid release to the environment. Collect leaking substance with suited hydrochloric acid proof containers. Do not allow to enter into drain or surface waters.

6.3. Methods and material for containment and cleaning up

Small spills shall be covered with an absorbing agent, possibly ground limestone, dolomite, calcium hydrate, dry soil or sand, and shall be removed in a closed container to a safe deposit for disposal. Wash site of spillage thoroughly with large amount of water.

6.3.1. Appropriate containment techniques:

6.3.2. Appropriate clean-up procedures: Neutralise small spillages with lime or soda ash. Rinse remnant with plenty of water.

6.3.3. Other information: Collect contaminated material in suited acid proof containers. Dispose of contaminated material and its container as hazardous waste according to local regulations.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1. Protective measures: Operate in a well-ventilated area. Provide sufficient air exchange and/or exhaust in work rooms. The efficiency of the ventilation system must be monitored regularly because of the possibility of blockage. Atmospheric concentrations should be minimized and kept as low as reasonably practicable below the occupational exposure limit.

The usual precautions for handling chemicals should be observed. Avoid any direct contact with the material. Use PPE. Substance is not flammable

7.1.2. Advice on general occupational hygiene: No eating, drinking, smoking or tobacco use at the place of work. Contact with skin and eyes and inhalation of vapours must be avoided under all circumstances. Wash hands prior eating, drinking or using restroom. Any protective clothing or shoes which become contaminated with this material should be removed immediately and laundered before wearing again.

Keep equipment clean. Keep stocks of decontaminant readily available.

7.2. Conditions for safe storage, including any incompatibilities

Do not store together with alkalis and oxidants. Keep container tightly closed and in a well-ventilated place. It shall not be stored in vicinity of flammable, oxidizable materials, e.g. chlorates, metals, metal hydrides, which react with acid with hydrogen release, and oxidising agents (KMnO_4 , $\text{K}_2\text{Cr}_2\text{O}_7$), because chlorine gas may generate. Aluminum equipment should not be used for storage and transfer.

7.3. Specific end use(s)

Cleaning product for industrial use only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

The recommended control strategies:

1. Employ good industrial hygiene practice.
2. Use local exhaust ventilation.
3. Enclose the process.
4. Seek the advice of a specialist.

8.1. Control parameters

8.1.1. Occupational exposure limits:

Name of Substance: Hydrochloric Acid

Exposure limit values

TLV (ACGIH-USA) 2002

TLVC = 7.5 mg/m³

TLVC = 5 ppm

Country (ppm)	Limit value (8 hours)		Limit value (short term)	
	(mg/m ³)	(ppm)	(mg/m ³)	(ppm)
Germany	2	3	4 (15 minutes average value)	6 (15 minutes average value)

8.1.2. DNEL (Derived No-Effect Level)/PNEC (Predicted No-Effect Concentration)-values

Workers

Acute/short-term exposure-systemic effects (dermal and inhalation):

Not relevant. Based on the properties and use of the substance.

Acute/short-term exposure-local effects, (dermal):

Not relevant. Based on the properties and use of the substance.

Acute/short-term exposure-local effects (inhalation):

DNEL = 15 mg/m³ (10 ppm)

Long-term exposure-systemic effects (dermal and inhalation):

Not relevant. Based on the properties and use of the substance.

Long-term exposure-local effects (dermal):

Not relevant. Based on the properties and use of the substance.

Long-term exposure-local effects (inhalation):

DNEL = 8 mg/m³ (5 ppm)

General population:

Not relevant. Based on the properties and use of the substance.

PNEC aqua (freshwater) 36 µg/L

PNEC aqua (marine water) 36 µg/L

PNEC aqua (intermittent releases) 45 µg/L

PNEC STP 36 µg/L

PNEC sediment (freshwater, marine water), soil:

The substance dissociates in water, thus the effect is only a pH effect.

8.2. Exposure controls

8.2.1. Appropriate engineering controls: Provide effective ventilation and light. Make emergency shower, wash-basin and eye-rinser available. Keep first aid kit in reach.

8.2.2. Personal protection equipment

8.2.2.1. Eye / Face protection: tightly fitting safety goggles or face shield.

8.2.2.2. Skin protection: acid-proof protective clothing, acid-proof shoes, boots.

Hand protection: acid-proof protective gloves to EN 374. e.g. PVC or rubber gloves

8.2.2.3. Respiratory protection: breathing mask B2 marked insert, or suitable respiratory protective equipment.

8.2.2.4. General safety and hygiene measures: Wearing of closed work clothing is required and additionally to the stated personal protective equipment. Keep away from drink, food and animal feeding stuffs. No eating, drinking, smoking or tobacco use at the place of work. Take off immediately all contaminated clothing. Hands and face should be washed before breaks. At the end of the shift the skin could be cleaned and skin-care agents applied.

8.2.3. Environmental exposure controls: In accordance with local and national regulations. Respect local/federal and national regulations for aqueous emissions.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

9.1.1. Appearance

Physical State:	Liquid
Color:	Clear, Red
Odor:	Pungent

9.1.2. Basic data

Boiling Point Range:	65.6°C – 110.0°C (150°F – 230°F)
Melting Point Range:	Not available

Solubility in water:	Appreciable
Flash Point:	None
Autoignition Temperature:	None
Lower Explosion Limit (vol %):	None
Upper Explosion Limit (vol %):	None
Vapour Pressure:	78mmHg at 20°C
Relative vapor density (air=1):	1.27
Viscosity:	1.9 mPa.s (at 15 ⁰ C)
Specific Gravity:	1.15 – 1.17 gr/cm ³ (at 20°C)
pH value (1% solution) :	0.5 – 2.0 (1% solution)

9.2. Other information

Particle size distribution (Granulometry): Granulometry is only relevant to solids. Descaler Liquid 555 is a solution.

Surface tension: Based on the structure, surface activity is not expected.

Explosiveness: Based on structure (no chemical groups associated with explosive properties).

Stability in organic solvents and identity of relevant degradation products: The product is inorganic.

Dissociation constant: The study is scientifically impossible, Descaler Liquid 555 is a strong acid and therefore the pKa is infinitely.

10. STABILITY AND REACTIVITY

10.1 Reactivity: The Hydrochloric Acid solution in water is a strong acid; it reacts violently with bases and is corrosive.

10.2. Chemical stability: Stable under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions: Reacts violently with oxidants forming toxic gas. Attacks many metals in the presence of water forming flammable/explosive gas.

10.4. Conditions to avoid: Reaction with strong oxidising agents. Reaction with alkaline substances (bases).

10.5. Incompatible materials: The product reacts with metals with evolution of highly flammable hydrogen. The acid reacts violent with alkalis with evolution of heat.

10.6. Hazardous decomposition products: By heating evolution of corrosive and toxic hydrogen chloride gas/aerosols. By contact with steel or aluminium and other metals highly flammable hydrogen gas. By contact with fire traces of toxic chlorine gas possible. By contact with strong oxidants (bleaching agents, H₂O₂, HNO₃, etc) evolution of toxic chlorine gas.

11. TOXICOLOGICAL INFORMATION

Name of Substance: Hydrochloric Acid

11.1. Acute toxicity

Acute toxicity Oral: Not classified due to lack of data.

Acute toxicity Inhalation: Not classified. Based on available data, the classification criteria are not met.

Rat LC50 = 45.6 mg/m³ air

Acute toxicity Dermal: Not classified due to lack of data.

11.2. Irritation/ corrosion

Skin corrosion / irritation: Skin Corr. 1B

Hydrochloric Acid applied as an aqueous solution at a percentage of 37% was corrosive to the rabbit skin.

Serious eye damage / irritation: Not classified. Based on available data, the classification criteria are not met. Risk of serious damage to eyes.

11.3. Sensitization

Respiratory sensitization: Not classified due to lack of data.

11.4. Germ cell mutagenicity

Not classified. Based on available data, the classification criteria are not met.

11.5. Carcinogenicity

Not classified. Based on available data, the classification criteria are not met. Hydrochloric Acid is not listed on the IARC, NTP or OSHA carcinogen lists.

11.6. Reproductive toxicity

Not classified due to lack of data.

11.7. STOT-single exposure

STOT SE 3

Affected organs: lungs; respiratory system. Route of exposure: Inhalation C \geq 10% w/w.

11.8. STOT-repeated exposure

Not classified. Based on available data, the classification criteria are not met.

11.9. Aspiration hazard

Not classified due to lack of data.

12. ECOLOGICAL INFORMATION

Name of Substance: Hydrochloric Acid

12.1. Toxicity

12.1.1. Aquatic toxicity: Not classified. HCl is not classified for the environmental compartment based on its dissociation in the environment, lack of bioaccumulation and lack of adsorption to particulate matter or surfaces. Furthermore, some factors such as the buffer capacity, the natural pH and the fluctuation of the pH are very specific for a certain ecosystem.

Freshwater fish pH = 3.25 it was normalized to LC50 = 20.5 mg/L

Daphnia pH = 4.9 it was normalized to EC50/LC50 = 0.45 mg/L

Freshwater algae pH = 4.7 it was normalized to EC50/LC50 = 0.73 mg/L

Microorganisms

(activated sludge) pH = 5.2 it was normalized to EC50/LC50 = 0.23 mg/L

12.1.2. Sediment toxicity: Data waiving. In the aquatic environment the effects of HCl are clearly related to the pH effect, as HCl will dissociate fully in H_3O^+ & Cl^- ions, of which the latter is not a harmful substance. The substance itself thus will not reach the sediment/terrestrial environment. According to column II of annex IV/X the test can thus be waived

12.1.3. Terrestrial toxicity:

Toxicity to soil macroorganisms and to terrestrial arthropods: Data waiver. In the aquatic environment the effects of Hydrochloric Acid are clearly related to the pH effect, as Hydrochloric Acid will dissociate fully in H_3O^+ & Cl^- ions, of which the latter is not a harmful substance. The substance itself thus will not reach the sediment/terrestrial environment. According to column II of annex IV/X the test can thus be waived.

Toxicity to terrestrial plants: Data waiver. In the aquatic environment the effects of Hydrochloric Acid are clearly related to the pH effect, as Hydrochloric Acid will dissociate fully in H_3O^+ & Cl^- ions, of which the latter is not a harmful substance. The substance itself thus will not reach the sediment/terrestrial environment. According to column II of annex IV/X the test can thus be waived.

Toxicity to soil micro-organisms: Data waiver. In the aquatic environment the effects of HCl are clearly related to the pH effect, as HCl will dissociate fully in H_3O^+ & Cl^- ions, of which the latter is not a harmful substance. The substance itself thus will not reach the sediment/terrestrial environment. According to column II of annex IV/X the test can thus be waived.

Toxicity to other terrestrial organisms: No data.

12.2. Persistence and degradability

Hydrolysis: Data waiver. The active substance, hydrochloric acid, is used as an aqueous solution (33-36%). Hydrochloric acid is a strong acid that is very soluble in water and dissociates completely to form chloride ion and hydronium ions. Thus, due to these intrinsic properties, it is scientifically

impossible to perform the hydrolysis test. In addition, since the behaviour of Hydrochloric Acid in water is known, it is also not scientifically necessary to perform a hydrolysis test.

Phototransformation in water: other justification. Not relevant.

Phototransformation in soil: other justification. Not relevant.

Biodegradation in water: Data waiver. As the active substance, hydrochloric acid, is an inorganic compound, the ready biodegradability, inherent biodegradability and biodegradation in seawater are scientifically impossible to perform.

Biodegradation in water and sediment: Data waiver. Substance disassociates when entering the water.

Biodegradation in soil: Data waiver. Substance disassociates when entering the water and has no adsorption/desorption potential.

12.3. Bioaccumulative potential

The substance is considered cationic at environmental pH levels, the log Kow was calculated to a value of -2.65. Following the Annex VIII Guidance this value does not impose any bioaccumulation potential.

12.4. Mobility in soil

Data waiver. The required test methods are not applicable to molecules which dissociate. Following dissociation in water, resultant ions are expected to undergo ion exchange within the soil. Further tests on absorption/desorption in water/sediment systems are therefore considered unnecessary and are impossible to perform.

12.5. Results of PBT and vPvB assessment

Hydrochloric Acid does not fulfil all criteria to be classified as a PBT or vPvB substance.

12.6. Other adverse effects

After acute inhalation exposure to concentrations below the limit of classification for acute inhalation adverse effects were observed in human case and human experimental studies. Based on possible short-term effects, the DNEL= $15\text{mg}/\text{m}^3$ value will be used for acute inhalation exposure.

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

Do not emit directly to drains, environment. After cautious neutralization with caustic solvent it is to be diluted with much water.

13.1. Waste treatment methods

In accordance with the international and local waste management regulations.

13.1.1. Product / Packaging disposal:

Product: The unnecessary untreated product shall be considered as hazardous waste. The generated waste shall be treated by specialized companies in disposing in line with the local regulations and with the hazardous waste regulations.

Packing: The uncleaned packing/container shall be handled in the same way as the product. The packaging material may be reused after cleaning.

13.1.2. Waste treatment options

Observe local authority regulations.

14. TRANSPORT INFORMATION

14.1 Proper Shipping Name: Hydrochloric Acid, Solution

14.2 LAND TRANSPORT

UN number:	1789		
ADR class:	8	RID class:	8

14.3 SEA TRANSPORT

UN number:	1789	EmS:	F-A, S-B
IMDG class:	8		
IMDG packing group:	II		

14.4 AIR TRANSPORT

UN number:	1789		
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.

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.