

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014



Revision: 07.10.2014


SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** De-Scale v.4
- **Article number:** 100910
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Descalant
- **1.3 Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
Theochem Laboratories
7373 Rowlett Park Drive
Tampa, FL 33610
Phone: 813-237-6463
- **1.4 Emergency telephone number:**
ChemTel Inc.
(800)255-3924, +1 (813)248-0585



SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
Classifications listed also are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).
- 
 corrosion
 Met. Corr.1 H290 May be corrosive to metals.
- 

 Skin Irrit. 2 H315 Causes skin irritation.
 Eye Irrit. 2 H319 Causes serious eye irritation.
 STOT SE 3 H335 May cause respiratory irritation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
 Xi; Irritant
 R36-37-38: Irritating to eyes. Irritating to respiratory system. Irritating to skin.
- **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

(Contd. on page 2)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

(Contd. of page 1)

The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is additionally classified and labelled according to the Globally Harmonized System within the United States (GHS).

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS05 GHS07

Signal word Warning

Hazard-determining components of labelling:

hydrochloric acid

Hazard statements

H290 May be corrosive to metals.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statements

P261 Avoid breathing mist/vapours/spray.

P280 Wear protective gloves / eye protection.

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

P312 Call a POISON CENTER/doctor if you feel unwell.

P302+P352 IF ON SKIN: Wash with plenty of water.

P406 Store in corrosive resistant container with a resistant inner liner.

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

Hazard description:

WHMIS-symbols:

D2B - Toxic material causing other toxic effects

E - Corrosive material



NFPA ratings (scale 0 - 4)



Health = 3

Fire = 0

Reactivity = 1

(Contd. on page 3)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

(Contd. of page 2)

- **HMIS-ratings (scale 0 - 4)**

HEALTH	3	Health = 3
FIRE	0	Fire = 0
REACTIVITY	1	Reactivity = 1

- **HMIS Long Term Health Hazard Substances**






None of the ingredients are listed.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 7647-01-0	hydrochloric acid	10-25%
EINECS: 231-595-7	 C R34;  Xi R37	
Index number: 017-002-00-2	 Met. Corr. 1, H290;  Skin Corr. 1B, H314	
	 STOT SE 3, H335	

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Remove breathing equipment only after contaminated clothing have been completely removed.
- **After inhalation:**
Supply fresh air.
Seek medical treatment in case of complaints.
Provide oxygen treatment if affected person has difficulty breathing.
- **After skin contact:**
Immediately remove any clothing soiled by the product.
Immediately rinse with water.
If skin irritation continues, consult a doctor.
Seek immediate medical help for blistering or open wounds.
- **After eye contact:**
Protect unharmed eye.
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Do not induce vomiting; call for medical help immediately.

(Contd. on page 4)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

(Contd. of page 3)

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

- **4.2 Most important symptoms and effects, both acute and delayed**

Strong caustic effect on skin and mucous membranes.

Breathing difficulty

Coughing

Gastric or intestinal disorders.

- **Hazards**

Danger of impaired breathing.

Danger of severe eye injury.

- **4.3 Indication of any immediate medical attention and special treatment needed**

Medical supervision for at least 48 hours.

If necessary oxygen respiration treatment.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**

- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

- **For safety reasons unsuitable extinguishing agents:** None.

- **5.2 Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

- **5.3 Advice for firefighters**

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

- **Additional information** Evacuate area and fight fire from from the upwind side.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**

Use respiratory protective device against the effects of fumes/dust/aerosol.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep people at a distance and stay on the windward side.

- **6.2 Environmental precautions:**

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

Inform respective authorities in case of seepage into water course or sewage system.

- **6.3 Methods and material for containment and cleaning up:**

Use limestone to neutralize and absorb spill.

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

Send for recovery or disposal in suitable receptacles.

Clean the affected area carefully; suitable cleaners are:

Warm water

Dispose contaminated material as waste according to item 13.

- **6.4 Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

(Contd. on page 5)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

See Section 13 for disposal information.

(Contd. of page 4)

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 - Prevent formation of aerosols.
 - Avoid splashes or spray in enclosed areas.
 - Use only in well ventilated areas.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
 - Provide ventilation for receptacles.
 - Avoid storage near extreme heat, ignition sources or open flame.
 - Unsuitable material for receptacle: aluminium.
 - Unsuitable material for receptacle: steel.
- **Information about storage in one common storage facility:**
 - Store away from oxidising agents.
 - Do not store together with alkalis (caustic solutions).
 - Store away from foodstuffs.
 - Store away from metals.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

Ingredients with limit values that require monitoring at the workplace:

7647-01-0 hydrogen chloride

IOELV (EU)	Short-term value: 15 mg/m ³ , 10 ppm Long-term value: 8 mg/m ³ , 5 ppm
PEL (USA)	Short-term value: C 7 mg/m ³ , C 5 ppm
REL (USA)	Short-term value: C 7 mg/m ³ , C 5 ppm
TLV (USA)	Short-term value: C 2,98 mg/m ³ , C 2 ppm
EL (Canada)	Short-term value: C 2 ppm

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 - The usual precautionary measures are to be adhered to when handling chemicals.
 - Keep away from foodstuffs, beverages and feed.
 - Immediately remove all soiled and contaminated clothing.

(Contd. on page 6)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

(Contd. of page 5)

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

- **Respiratory protection:**

Not necessary if room is well-ventilated.

Use suitable respiratory protective device when aerosol or mist is formed.

For spills, respiratory protection may be advisable.

- **Protection of hands:**



Protective gloves

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

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

- **Material of gloves**

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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **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.

- **For the permanent contact gloves made of the following materials are suitable:**

Butyl rubber, BR

Neoprene gloves

Fluorocarbon rubber (Viton)

- **Eye protection:**

Contact lenses should not be worn.



Safety glasses

Goggles recommended during refilling

- **Body protection:** Acid resistant protective clothing

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form: Liquid

Colour: Red

- **Odour:** Acidic

(Contd. on page 7)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

(Contd. of page 6)

- **Odour threshold:** Not determined.
- **pH-value at 20 °C:** < 2,0
- **Change in condition**
 - Melting point/Melting range:** Not Determined.
 - Boiling point/Boiling range:** 100 °C (212 °F)
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Not applicable.
- **Auto/Self-ignition temperature:**
 - Decomposition temperature:** Not determined.
- **Self-igniting:** Product is not self-igniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
 - Lower:** Not determined.
 - Upper:** Not determined.
- **Vapour pressure:** Not determined.
- **Density at 20 °C:** 1,09 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not determined.
- **Evaporation rate** Not determined.
- **Solubility in / Miscibility with water:** Fully miscible.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic:** Not determined.
 - Kinematic:** Not determined.
- **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Toxic fumes may be released if heated above the decomposition point.
Reacts with alkali (lyes).
Reacts with metals forming hydrogen.
Corrosive action on metals.
Reacts with strong oxidising agents.
Reacts with amines.

(Contd. on page 8)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

(Contd. of page 7)

- **10.4 Conditions to avoid** Store away from oxidising agents.
- **10.5 Incompatible materials:**
Warning! Do not use together with other products. May release dangerous gases (chlorine).
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Hydrogen chloride (HCl)
Chlorine compounds
Nitrogen oxides

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

7647-01-0 hydrogen chloride

Oral LD50 900 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitisation:** No sensitising effects known.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Corrosive
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- **Repeated dose toxicity:** May cause damage to organs through prolonged or repeated exposure.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** Does not accumulate in organisms.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:**
The product causes an alteration of the pH-value within the testing system. The result refers to the non-neutralised sample.
- **Additional ecological information:**
- **General notes:**
At present there are no ecotoxicological assessments.
This statement was deduced from the properties of the single components.
Do not allow product to reach ground water, water course or sewage system.

(Contd. on page 9)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

(Contd. of page 8)

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

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. If the dilution of the use-level pH-value is considerably increased after use, the aqueous waste, emptied into drains, is only low water-dangerous.

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Can be disposed of with household garbage with prior chemical-physical or biological treatment following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

- **Uncleaned packaging:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- **14.1 UN-Number**

- **DOT, ADR, IMDG, IATA**

UN1789

- **14.2 UN proper shipping name**



Limited Quantity for packages less than 30 kg (66 lb) and inner packagings less than 1 L (0.3 gal).

- **DOT, IATA**

- **ADR**

- **IMDG**

- **14.3 Transport hazard class(es)**

Hydrochloric acid solution

1789 HYDROCHLORIC ACID SOLUTION

HYDROCHLORIC ACID SOLUTION

- **DOT**



- **Class**

8 Corrosive substances.

(Contd. on page 10)



Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

		(Contd. of page 9)
<ul style="list-style-type: none"> · Label 	8	
<ul style="list-style-type: none"> · ADR 		
		
<ul style="list-style-type: none"> · Class · Label 	8 (C9) Corrosive substances. 8	
<ul style="list-style-type: none"> · IMDG, IATA 		
		
<ul style="list-style-type: none"> · Class · Label · 14.4 Packing group · DOT, ADR, IMDG, IATA · 14.5 Environmental hazards: · Marine pollutant: · 14.6 Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	8 Corrosive substances. 8 II No Warning: Corrosive substances. 80 F-A,S-B Acids Not applicable.	
<ul style="list-style-type: none"> · Transport/Additional information: 		
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) 	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml	
<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	2 E	
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml	
<ul style="list-style-type: none"> · DOT · Remarks: · UN "Model Regulation": 	RQ 5000 lbs (2270 kg) UN1789, Hydrochloric acid solution, 8, II	

(Contd. on page 11)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

(Contd. of page 10)

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- United States (USA)
- SARA

· Section 355 (extremely hazardous substances):

7647-01-0	hydrochloric acid
-----------	-------------------

· Section 313 (Specific toxic chemical listings):

7647-01-0	hydrochloric acid
-----------	-------------------

· TSCA (Toxic Substances Control Act):
--

All ingredients are listed.

· Proposition 65 (California):

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

· Chemicals known to cause developmental toxicity:
--

None of the ingredients are listed.

· Carcinogenic Categories

· EPA (Environmental Protection Agency)

None of the ingredients are listed.

· IARC (International Agency for Research on Cancer)
--

None of the ingredients are listed.

· TLV (Threshold Limit Value established by ACGIH)
--

7647-01-0	hydrogen chloride	A4
-----------	-------------------	----

· NIOSH-Ca (National Institute for Occupational Safety and Health)
--

None of the ingredients are listed.

· Canada

· Canadian Domestic Substances List (DSL)

All ingredients are listed.

· Canadian Ingredient Disclosure list (limit 0.1%)
--

None of the ingredients are listed.

· Canadian Ingredient Disclosure list (limit 1%)
--

7647-01-0	hydrochloric acid
-----------	-------------------

(Contd. on page 12)

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
OSHA GHS

Printing date 07.10.2014

Revision: 07.10.2014

Trade name: De-Scale v.4

(Contd. of page 11)

- **Other regulations, limitations and prohibitive regulations**

- **Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients are listed.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**

H290 May be corrosive to metals.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

R34 Causes burns.

R37 Irritating to respiratory system.

- **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)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Met. Corr. 1: Corrosive to metals, Hazard Category 1

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3