1. Product and company identification

Product identifier

Trade name: Cleaning solution B

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

General use: Cleaning agent, Laboratory chemicals for pH electrodes.
Only for specialists for purposes of research and analysis.

Details of the supplier of the safety data sheet

Company name: Hamilton Bonaduz AG
Street/POB-No.: Via Crusch 8
Postal Code, city: 7402 Bonaduz
Switzerland
WWW: www.hamiltoncompany.com
Telephone: +41 58 610 10 10
Department responsible for information:
After-sales service
E-mail: techsupport.pa.ch@hamilton.ch

Emergency phone number

GIZ-Nord, Göttingen, Germany,
Telephone: +49 551-19240

2. Hazards identification

Emergency overview

Appearance: Physical state at 68 °F and 101.3 kPa: liquid
Color: colorless
Odor: odorless

Classification: Corrosive to Metals - Category 1;

Hazard symbols:

Signal word: **Warning**

Hazard statements: May be corrosive to metals.

Precautionary statements:

Keep only in original container.
Absorb spillage to prevent material damage.

Regulatory status

This material is considered hazardous by the U.S. OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards not otherwise classified

A corrosive effect cannot be ruled out because of the pH value.
Liquid splashes can lead to irritations of the eyes.
see section 11: Toxicological information

3. Composition / Information on ingredients

Chemical characterization: Aqueous solution

Relevant ingredients:

CAS No.	Designation	Concentration	Classification
CAS 7647-01-0	Hydrochloric acid	4 %	Corrosive to Metals - Category 1. Skin Corrosion - Category 1B. Specific Target Organ Toxicity (Single Exposure) - Category 3.

4. First aid measures

In case of inhalation: Move victim to fresh air. In case of respiratory difficulties seek medical attention.

Following skin contact: After contact with skin, wash immediately with plenty of water. Remove contaminated clothing. In case of skin reactions, consult a physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Seek the attention of an ophthalmologist immediately.

After swallowing: Rinse mouth and drink large quantities of water.
If you feel unwell, seek medical advice.

Most important symptoms/effects, acute and delayed

In case of ingestion: burns (pain). Risk of perforation
After eye contact: Liquid splashes can lead to irritations of the eyes.

Information to physician

Treat symptomatically.

5. Fire fighting measures

Flash point/flash point range:
No data available

Auto-ignition temperature: No data available

Suitable extinguishing media:
Co-ordinate fire-fighting measures to the fire surroundings.

Specific hazards arising from the chemical

Not combustible. Hydrogen may form upon contact with metals (danger of explosion!).
In case of fire may be liberated: Hydrogen chloride, chlorine, Hydrogen.

Protective equipment and precautions for firefighters:
In case of surrounding fires: Wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions: Do not breathe vapor or spray. Avoid contact with skin and eyes. Wear appropriate protective equipment.

Environmental precautions:
Do not allow to penetrate into soil, waterbodies or drains.

Methods for clean-up: Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents) and place in closed containers for disposal. Wash spill area with plenty of water.

7. Handling and storage

Handling

Advices on safe handling: Provide adequate ventilation. Avoid contact with skin and eyes. Wear appropriate protective equipment.

Storage

Requirements for storerooms and containers:

Keep container tightly closed. Store at room temperature.

8. Exposure controls / personal protection

Exposure guidelines

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
7647-01-0	Hydrochloric acid	USA: ACGIH: Ceiling	2.98 mg/m³; 2 ppm (A4)
		USA: NIOSH: Ceiling	7 mg/m³; 5 ppm
		USA: OSHA: Ceiling	7 mg/m³; 5 ppm

Engineering controls

Provide good ventilation and/or an exhaust system in the work area.
See also information in chapter 7, section storage.

Personal protection equipment (PPE)

Eye/face protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Skin protection: Wear suitable protective clothing.

Protective gloves according to OSHA Standard - 29 CFR: 1910.138.
Glove material: Nitrile rubber or butyl caoutchouc (butyl rubber).
Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. Use combination filter type E-P2/P3 according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

General hygiene considerations:

Change contaminated clothing.
Avoid contact with skin and eyes.
Wash hands before breaks and after work.

Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance:	Physical state at 68 °F and 101.3 kPa: liquid Color: colorless
Odor:	odorless
Odor threshold:	No data available
pH:	at 68 °F: approx. 1
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	approx. 212 °F
Flash point/flash point range:	No data available
Evaporation rate:	No data available
Flammability:	No data available
Explosion limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Density:	at 68 °F: approx. 1.0 g/mL
Water solubility:	at 68 °F: soluble
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Thermal decomposition:	No data available
Additional information:	No data available

10. Stability and reactivity

Reactivity: May be corrosive to metals.

Chemical stability: Stable under recommended storage conditions.

Possibility of hazardous reactions:
Hydrogen may form upon contact with metals (danger of explosion!).

Conditions to avoid: Protect from excessive heat.

Incompatible materials: Metals

Hazardous decomposition products:
Hydrogen chloride, chlorine, Hydrogen

Thermal decomposition: No data available

11. Toxicological information

Toxicological tests

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.
Acute toxicity (oral): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Lack of data.

Serious eye damage/irritation: Lack of data.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

Symptoms

In case of ingestion: burns (pain). Risk of perforation
After eye contact: Liquid splashes can lead to irritations of the eyes.

General remarks

A corrosive effect cannot be ruled out because of the pH value.
Further hazardous properties cannot be excluded. Handle in accordance with good industrial hygiene and safety practice.

12. Ecological information

Ecotoxicity

Aquatic toxicity: Harmful effects on water organisms by modification of pH-value.

Mobility in soil

No data available

Persistence and degradability

Further details: No data available

Additional ecological information

General information: Do not allow to enter undiluted resp. in large quantities into surface water or into drains.

13. Disposal considerations

Product

Recommendation: Dispose of waste according to applicable legislation.

Package

Recommendation: Dispose of waste according to applicable legislation.
Non-contaminated packages may be recycled.

14. Transport information

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR:

UN 1789, HYDROCHLORIC ACID

Transport hazard class(es)

ADR/RID: Class 8, Code: C1
IMDG: Class 8, Subrisk -
IATA-DGR: Class 8

Packing group

ADR/RID, IMDG, IATA-DGR:

III

Environmental hazards

Marine pollutant: no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

USA: Department of Transportation (DOT)

Identification number:	UN1789
Proper shipping name:	UN 1789, HYDROCHLORIC ACID
Hazard class or Division:	8
Packing Group:	III
Labels:	8
Special provisions:	A3, IB3, T4, TP1
Packaging – Exceptions:	154
Packaging – Non-bulk:	203
Packaging – Bulk:	241
Quantity limitations – Passenger aircraft / rail:	5 L
Quantity limitations – Cargo only:	60 L
Vessel stowage – Location:	C
Vessel stowage – Other:	8, 53, 58

Sea transport (IMDG)

UN number:	UN 1789
Proper shipping name:	UN 1789, HYDROCHLORIC ACID
Class or division, Subsidary risk:	Class 8, Subrisk -
Packing Group:	III
EmS:	F-A, S-B
Special provisions:	223
Limited quantities:	5 L
Excepted quantities:	E1
Package - Instructions:	P001, LP01
Package - Provisions:	-
IBC - Instructions:	IBC03
IBC - Provisions:	-
Tank instructions - IMO:	-
Tank instructions - UN:	T4
Tank instructions - Provisions:	TP1
Stowage and handling:	Category C. SG36 SG49
Properties and observations:	Colourless liquid. An aqueous solution of the gas hydrogen chloride. Highly corrosive to most metals. Causes burns to skin eyes and mucous membranes.
Marine pollutant:	no
Segregation group:	1a

Air transport (IATA)

UN/ID number:	UN 1789
Proper shipping name:	UN 1789, HYDROCHLORIC ACID
Class or division, Subsidary risk:	Class 8
Packing Group:	III
Hazard label:	Corrosive
Excepted Quantity Code:	E1
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y841 - Max. Net Qty/Pkg. 1 L
Passenger and Cargo Aircraft:	Pack.Instr. 852 - Max. Net Qty/Pkg. 5 L
Cargo Aircraft only:	Pack.Instr. 856 - Max. Net Qty/Pkg. 60 L
Special provisions:	A3 A803
Emergency Response Guide-Code (ERG):	8L

15. Regulatory information

National regulations - U.S. Federal Regulations

Hydrochloric acid:

TSCA Inventory: listed; EPA flags T
TSCA HPVC: not listed
Carcinogen Status:
IARC Rating: Group 3
OSHA Carcinogen: not listed
NTP Rating: not listed
Clean Air Act:
Accidental Release Prevention: Threshold 5000 lbs. / Basis for listing = a
Hazardous Air Pollutants: yes
Clean Water Act:
Hazardous Substances: RQ 5000 lbs.
Other Environmental Laws:
CERCLA: RQ 5000 lbs.
SARA Title III Section 302, EHS: TPQ 500 lbs. / RQ 5000 lbs.
SARA Title III Section 313, Toxic Release: Conc. 1.0% / Threshold Standard
NIOSH Recommendations:
Occupational Health Guideline: 0332
OSHA Process Safety Management: Threshold 5000 lbs.

National regulations - U.S. State Regulations

Hydrochloric acid:

Delaware Air Quality Management List:
DRQ: 5000 - RQ State: Federal Regulations Apply
Idaho Air Pollutant List:
Title 585 -- AAC: 0.375 -- EL: 0.05 -- OEL: 7.5 -- Title 586: -
Massachusetts Haz. Substances codes: 2,4,5 *E* F6 F8 F9
Minnesota Haz. Substance:
Codes: AO - Ratings: 9.4 - Status: Title III. TRI.
New Jersey Extraordinarily Hazardous Substances:
EPA Threshold: 5000
NJ Threshold: 2000 - NJ Group: I - NJ Table: I Part A - NJ Basis: Not on List
New Jersey RTK Hazardous Substance:
DOT: 1789 - Sub No.: 1012 - TPQ: -
New York List of Hazardous Substances:
RQ -- Air: 5000 - RQ -- Land: 100 - Note: No Note Associated with this chemical.
Pennsylvania Haz. Substance code: E
Washington Air Contaminant:
Ceiling: 5 ppm / 7 mg

National regulations - Great Britain

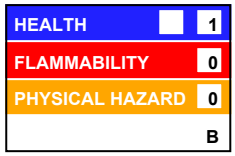
Hazchem-Code: 2R

16. Other information

Text for labeling: Contains 4 % Hydrochloric acid. Safety data sheet available on request.

Hazard rating systems:

NFPA Hazard Rating:
Health: 1 (Slight)
Fire: 0 (Minimal)
Reactivity: 0 (Minimal)
HMIS Version III Rating:
Health: 1 (Slight)
Flammability: 0 (Minimal)
Physical Hazard: 0 (Minimal)
Personal Protection: B



Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
OEL: Occupational Exposure Limit Value
AS/NZS: Australian Standards/New Zealand Standards
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EN: European Standard
IATA: International Air Transport Association
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
STOT SE: Specific target organ toxicity - single exposure
TLV: Threshold Limit Value
UN: United Nations
vPvB: Very persistent and very bioaccumulative
WEL: Workplace Exposure Limit

Reason of change: General revision
Changes in section 1: Poisons information service (Denmark, France, Spain, Russia)

Date of first version: 9/24/2012

Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.