MANUFACTURER: **VWR International, LLC**

REVISION DATE: **2/28/16**

GENERAL DYNAMICS
Electric Boat
64-04-5832 REV 08/04

PRODUCT NAME
Hydrochloric Acid, 37%

MSDS NUMBER
9623

TARGET ORGAN EFFECTS (SHORT AND LONG-TERM)

- X EYE DAMAGE
- NERVOUS SYSTEM DAMAGE
- LIVER DAMAGE
- CIRCULATORY SYSTEM/ BLOOD DAMAGE
- KIDNEY DAMAGE
- RESPIRATORY SYSTEM/ LUNG DAMAGE X
- X SKIN DAMAGE
- REPRODUCTIVE SYSTEM DAMAGE

HEALTH HAZARDS	
HIGHLY TOXIC	
TOXIC	
CORROSIVE	X
IRRITANT	
SENSITIZER	
REPRODUCTIVE HAZARD	
CANCER HAZARD	

ROUTE OF ENTRY		
	INHALATION	X
	EYE CONTACT	X
	INGESTION	
	SKIN CONTACT/ ABSORPTION	X

HEALTH	3
FLAMMABILITY	0
REACTIVITY	1
PROTECTIVE EQUIPMENT	G

RATINGS

4-SEVERE
3-SERIOUS
2-MODERATE
1-SLIGHT
0-MINIMAL

PHYSICAL HAZARDS

EXPLOSIVE	FLAMMABLE LIQUID/SOLID	UNSTABLE (REACTIVE)	OXIDIZER	COMPRESSED GAS
SPONTANEOUS IGNITION	COMBUSTIBLE LIQUID	WATER REACTIVE	ORGANIC PEROXIDE	FLAMMABLE GAS

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Safety Data Sheet

According to Hazardous Products Regulation (SOR/2015-17)

Revision date: 28.02.2016	*Version: 6.00*	*Print date: 28.02.2016*

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

Product identifier

Trade name/designation:	Hydrochloric acid
Product No.:	46414
Synonymes:	no data available
CAS No.:	7647-01-0
Other means of identification:	

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

Recommended Use:	For Further Manufacturing Use Only
Uses advised against:	Not for Human or Animal Drug Use

Details of the supplier of the safety data sheet

Canada

Supplier

VWR International LLC

Street	100 Matsonford Road Radnor Corporate Center, Building One, Suite 200 P. O. Box 6660
Postal code/city	Radnor, PA 19087
Telephone	+1-800-932-5000 toll-free within US/CA +1-610-386-1700
Telefax	+1-610-728-2103

Manufacturer

VWR International Co.

Street	2360 Argentia Road
Postal code/city	Mississauga, Ontario, L5N 5Z7

Emergency telephone

Telephone	+1-613-996-6666 (Canutec, 24 hrs/day, 7 days/week, Canada)

Preparation Information

VWR International - Data Compliance

E-mail	sds@vwr.com

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Hazardous Products Regulation (SOR/2015-17)

Hazard classes and hazard categories	Hazard statements
Skin corrosion, category 1B	H314
Specific target organ toxicity (single exposure), category 3, vascular	H335
Substance or mixture corrosive to metals, category 1	H290

2.2 Label elements

Labelling in accordance with (SOR/2015-17)

Hazard pictograms

Signal word: Danger

Hazard statements	
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.
H290	May be corrosive to metals.

Precautionary statements	
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P310	IF exposed or concerned: Immediately call a POISON CENTER/doctor.

Other hazards

Hazards not otherwise classified (HNOC)
no data available

SECTION 3: Composition / information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

Hazardous ingredients GHS Classification in accordance with (SOR/2015-17)

Substance name	Concentration	Product identifier	Hazard classes and hazard categories
Hydrochloric acid	>=25%	CAS No.: 7647-01-0	Skin Corr. 1B - H314 STOT SE 3 - H335

SECTION 4: First aid measures

4.1 General information

IF exposed: Immediately call a POISON CENTER/doctor. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

After inhalation

Immediately call a POISON CENTER/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

In case of ingestion

Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

4.2 Most important symptoms/effects, acute and delayed

no data available

4.3 Indication of any immediate medical attention and special treatment needed

no data available

4.4 Self-protection of the first aider

First aider: Pay attention to self-protection!

4.5 Information to physician

no data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

The product itself does not burn.

Co-ordinate fire-fighting measures to the fire surroundings.

Extinguishing media which must not be used for safety reasons

no restriction

5.2 Specific hazards arising from the chemical

In case of fire may be liberated:

Hydrogen chloride (HCl)

5.3 Advice for firefighters

DO NOT fight fire when fire reaches explosives. In case of fire: Wear self-contained breathing apparatus.

5.4 Additional information

Do not allow run-off from fire-fighting to enter drains or water courses. Do not inhale explosion and combustion gases. Use caution when applying carbon dioxide in confined spaces. *Carbon dioxide can displace oxygen. Use water spray/stream to protect* personnel and to cool endangered containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

In case of major fire and large quantities: Remove persons to safety. Wear a self-contained breathing apparatus and chemical protective clothing.

6.2 Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up

Spilled product must never be returned to the original container for recycling. Clean contaminated objects and areas thoroughly observing environmental regulations. Soak up inert absorbent and dispose as waste requiring special attention.

6.4 Additional information

Clear spills immediately.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid: Inhalation Avoid contact with skin and eyes. Use extractor hood (laboratory). If handled uncovered, arrangements with local exhaust ventilation have to be used. If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means. Protect from moisture.

7.2 Conditions for safe storage, including any incompatibilities

storage temperature: no data available

Storage class: no data available

Keep container tightly closed in a cool, well-ventilated place.

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Does not contain substances above concentration limits fixing an occupational exposure limit.

8.2 Engineering controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Personal protection equipment (PPE)

Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

Eye/face protection

Eye glasses with side protection

Skin protection

When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Recommended glove articles

By short-term hand contact

Suitable material:	CR (polychloroprene, chloroprene rubber)
Thickness of the glove material:	0,13 mm
Breakthrough time (maximum wearing time):	101 min

By long-term hand contact

Suitable material:	CR (polychloroprene, chloroprene rubber)
Thickness of the glove material:	-
Breakthrough time (maximum wearing time):	> 480 min

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Additional information
Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Environmental exposure controls
no data available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a) Appearance	
Physical state:	liquid
Color:	colorless
(b) Odour:	no data available
(c) Odour threshold:	no data available

Safety relevant basic data

(d) pH:	no data available
(e) Melting point/freezing point:	no data available
(f) Initial boiling point and boiling range:	no data available
(g) Flash point:	no data available
(h) Evaporation rate:	no data available
(i) Flammability (solid, gas):	not applicable
(j) Flammability or explosive limits	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
(k) Vapour pressure:	no data available
(l) Vapour density:	no data available
(m) Relative density:	no data available
(n) Solubility(ies)	
Water solubility (g/L):	no data available
Soluble (g/L) in Ethanol:	no data available
(o) Partition coefficient: n-octanol/water:	no data available
(p) Auto-ignition temperature:	no data available
(q) Decomposition temperature:	no data available
(r) Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	no data available
(s) Explosive properties:	not applicable
(t) Oxidising properties:	not applicable

9.2 Other information

Bulk density:	not applicable
Refraction index:	no data available
Dissociation constant:	no data available
Surface tension:	no data available
Henry constant:	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Corrosive to metals

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Explosive reaction with:
Alkali metals
Alkaline earth metal
Alkali (lye)
Violent reaction with:
light metals
Powdered metals
Exothermic reaction with:
Water
Substance, organic

10.4 Conditions to avoid

Humidity

10.5 Incompatible materials

Metal

10.6 Hazardous decomposition products

no data available

10.7 Additional information

no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects
Acute oral toxicity:
no data available

Acute dermal toxicity:
Hydrochloric acid - LD50: > 5010 mg/kg - Rabbit - (Japan GHS Basis for Classification Data)

Acute inhalation toxicity:
Hydrochloric acid - LC50: 1.68 mg/L - Rat - (Japan GHS Basis for Classification Data)

Irritant and corrosive effects
Primary irritation to the skin:
Causes severe skin burns and eye damage.

Irritation to eyes:
Causes serious eye damage.

Irritation to respiratory tract:
May cause respiratory irritation.

Respiratory or skin sensitization
In case of skin contact: not sensitising
After inhalation: not sensitising

STOT-single exposure
May cause respiratory irritation.

STOT-repeated exposure
not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

no data available	ACGIH	IARC	NTP	OSHA

Germ cell mutagenicity
No indications of human germ cell mutagenicity exist.

Reproductive toxicity
No indications of human reproductive toxicity exist.

Aspiration hazard
not applicable

Other adverse effects
no data available

Additional information
no data available

SECTION 12: Ecological information

12.1 Ecotoxicity

Fish toxicity:
no data available

Daphnia toxicity:
Hydrochloric acid - LC50: 250 mg/l (48 h) - Portmann, J.E., and K.W. Wilson 1971. The Toxicity of 140 Substances to the Brown Shrimp and Other Marine Animals. Shellfish Information Leaflet No.22 (2nd Ed.):12 p.

Algae toxicity:
no data available

Bacteria toxicity:
no data available

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water: no data available

12.4 Mobility in soil:
no data available

12.5 Results of PBT/vPvB assessment
no data available

12.6 Other adverse effects
no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product
Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

Appropriate disposal / Package
Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

Additional information
no data available

SECTION 14: Transport information

Land transport (DOT)

UN-No.:	1789
Proper Shipping Name:	HYDROCHLORIC ACID
Class(es):	8
Classification code:	C1
Hazard label(s):	8
Packing group:	II
Environmental hazards:	No
Marine pollutant:	No
Special precautions for user:	

Sea transport (IMDG)

UN-No.:	1789
Proper Shipping Name:	HYDROCHLORIC ACID
Class(es):	8
Classification code:	
Hazard label(s):	8
Packing group:	II
Environmental hazards:	No
MARINE POLLUTANT:	no data available
Special precautions for user:	
Segregation group:	1
EmS-No.	F-A S-B

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Air transport (ICAO-TI / IATA-DGR)

UN-No.:	1789
Proper Shipping Name:	HYDROCHLORIC ACID
Class(es):	8
Classification code:	
Hazard label(s):	8
Packing group:	II
Special precautions for user:	

SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Domestic Substance List:

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygiensts
DOT - Department of Transportation
IARC - International Agency for Research on Cancer
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
PEL - Permissible Exposure Limit
STV - Short Term Value
SVHC - Substances of Very High Concern
TLV - Threshold Limit Value
vPvB - very Persistent, very Bioaccumulative
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
AGS - Committee on Hazardous Substances (Ausschuss für Gefahrstoffe)
CLP - Regulation on Classification, Labelling and Packaging of Substances and Mixtures
DFG - German Research Foundation (Deutsche Forschungsgemeinschaft)
Gestis - Information system on hazardous substances of the German Social Accident Insurance (Gefahrstoffinformationssystem der Deutschen Gesetzlichen Unfallversicherung)
RID - Regulation concerning the International Carriage of Dangerous Goods by Rail

Additional information

Indication of changes: general update

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The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safty precautions. It does not represent any guarantee of the properties of the product. VWR International and his Affiliates shall not be held liable for any damage resulting from handling.