MATERIAL SAFETY DATA SHEET

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

1.1 Product identifiers

Product name: HYDROCHLORIC ACID 2%-37%
Product codes: REA117, REA118, REA114, REA113, REA112, NSI-006935, NSI-007097, NSI-008362, NSI-0010589
EC-No. 231-595-7
EU REACH-Reg. No.: 01-2119484862-27-xxxx
Brand: Solmedia Ltd

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

Identified uses – Manufacture of substances. Laboratory chemicals.

1.3 Details of the supplier of the safety data sheet

- Name of Supplier: Solmedia Ltd.
- Address of Supplier: Unit 2, Vernon Drive
  Battlefield Enterprise Park
  Shrewsbury
  SY1 3TF
  UK
- Telephone: 0844 80 80 900
- Email: labsupplies@solmedialtd.com

1.4 Emergency telephone number

Emergency Phone # +44 (0)844 80 80 900

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No 1272/2008

Hazard Class	Hazard Category	Target Organs	Hazard Statement
Corrosive to metals	Category 1	-	H290
Skin Corrosion	Category 1B	-	H314
Specific target organ toxicity – single exposure	Category 3	Respiratory Systems	H335
Serious eye damage	Category 1	-	H314

Most important adverse effects:

Human Health — See section 11 for toxicology information
Physical and Chemical Hazards — See section 9/10 for physicochemical information
Potential environmental effects — See section 12 for environmental information

2.2 Label elements

Label elements under CLP:

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

Signal words: Danger

Precautionary statements:

Prevention	P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
	P280	Wear protective gloves/protective clothing/eye protection/face 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.
	P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
Disposal	P501	Dispose of contents/ container in accordance with the local/regional/international regulations.

2.3 Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical identity: HYDROCHLORIC ACID 37%

Chemical nature Aqueous solution

3.2 Mixtures

			Classification (Regulation (EC) No 1272/2008	
Hazardous Components		Amount [%]	Hazard class/ Hazard category	Hazard Statements
Name:	Hydrochloric acid	>2 – 37%	Met. Corr. 1 STOT SE3 Skin Corr. 1B	H290 H335 H314
CAS No.	7647-01-0			
EC-No.	231-595-7			
EU REACH- Reg. No.	01-2119484862-27-xxxx			
Index No:	017-002-01-X			

SECTION 4: First aid measures

4.1 General information

IF exposed: Immediately call a POISON CENTRE/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 CENTRE/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. Contact doctor with 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 CENTRE/doctor/…. Do NOT induce vomiting. Rinse mouth thoroughly with water. Give nothing to eat or drink.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Inhalation of vapours is irritating to the respiratory system, may cause throat pain and cough.

Effects : Extremely corrosive and destructive to tissue. If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. See Section 11 for more detailed information on health effects and symptoms**.**

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons

High volume water jet

5.2 Special hazards arising from the substance or mixture

The product itself does not burn. Contact with metals liberates hydrogen gas

Hazardous combustion Products – Hydrogen chloride gas

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Wear appropriate body protection (full protective suit)

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Keep away unprotected persons. Use personal protective equipment. Ensure adequate ventilation. Avoid contact with the skin and the eyes. Do not breathe vapours or spray mist.

6.2 Environmental precautions

Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities. If material reaches soil inform authorities responsible for such cases.

6.3 Methods and materials for containment and cleaning up

Keep in suitable, closed containers for disposal and handle any leakage with PPE. For small spillages, wipe with absorbent cloth and/or absorbent disposable material and dispose of safely. For larger spillages use absorbent material i.e vermiculite and put into containers and dispose of safely.

Spilled product must never be returned to the original container for recycling. Clean contaminated objects and areas thoroughly observing environmental regulations. Collect in closed and suitable containers for disposal.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on personal protective equipment.

See Section 13 for waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

All work processes must always be designed so that the following is as low as possible: Inhalation skin contact Eye contact. 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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Store in original container. Keep in an area equipped with acid resistant flooring. Suitable materials for containers: polyethylene; Polypropylene; Unsuitable materials for containers: Metals

Advice on protection against fire and explosion

Normal measures for preventive fire protection**.**

Further information on storage conditions

Keep tightly closed in a dry and cool place. Keep in a well ventilated place.

Storage temperature: 15-25^{o}C

Storage class: 8B

Advice on common storage

Keep away from food, drink and animal feeding stuffs. Keep away from metals.

7.3 Specific end use(s)

No information available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)

DNEL

Workers, Acute – local effects, Inhalation	15 mg/m3
Workers, Long-term – local effects, Inhalation	8 mg/m3

Predicted No Effect Concentration (PNEC)

Fresh water	36 µg/l
Marine water	36 µg/l
Intermittent releases	45 µg/l
Sewage treatment plant (STP)	36 µg/l

Fresh water sediment
Exposition is not expected.

Marine sediment
Exposition is not expected.

Soil
Exposition is not expected.

Other Occupational Exposure Limit Values

UK. EH40 Workplace Exposure Limits (WELs), Short Term Exposure Limit (STEL):, Gas and aerosol mists. 5 ppm, 8 mg/m3

UK. EH40 Workplace Exposure Limits (WELs), Time Weighted Average (TWA):, Gas and aerosol mists. 1 ppm, 2 mg/m3

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, Time Weighted Average (TWA): 5 ppm, 8 mg/m3 Indicative

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, Short Term Exposure Limit (STEL): 10 ppm, 15 mg/m3 Indicative

ELV (IE), Short Term Exposure Limit (STEL): 10 ppm, 15 mg/m3 Indicative OELV

ELV (IE), Time Weighted Average (TWA): 5 ppm, 8 mg/m3 Indicative OELV

8.2 Exposure 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 protective equipment

Wear suitable protective clothing. When handling with chemical substances, protective clothing with CE-labels including the four control digits must be worn. For the protection against direct skin contact, body protective clothing is essential (in addition to the usual working clothes).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique

(Without touching glove's outer surface) to avoid skin contact with this product. Dispose of Contaminated gloves immediately after contact use in accordance with applicable laws and good laboratory practices.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact	Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: <20 min
Splash contact	Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: <60 min

Wash and dry hands.

Body Protection

Impervious clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory equipment must be worn at high concentration and unless adequate exhaust or ventilation is available. For nuisance exposures use type OV/AG (US) or type ABEK

(EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye protection:

Goggles recommended during refilling: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

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.

Control of environmental exposure

Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. If the product contaminates rivers and lakes or drains inform respective authorities. If material reaches soil inform authorities responsible for such cases.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

State:	Liquid
Colour:	Colourless to light yellow
Odour:	Stinging
pH:	< 1 (20 °C)
Freezing point/range :	-42 °C 32% solution -29 °C 37% solution
Boiling point/boiling range :	80 °C 32% solution 45 °C 37% solution
Flash point :	Not applicable
Evaporation rate :	No data available
Flammability (solid, gas) :	Not applicable
Upper explosion limit :	Not applicable
Lower explosion limit :	Not applicable
Vapour pressure :	30 hPa (20 °C) 32% solution 200 hPa (20 °C) 37% solution
Relative vapour density :	No data available
Density :	1.15 g/cm3 (20 °C) 30% solution 1.17 g/cm3 (20 °C) 35% solution 1.18 g/cm3 (20 °C) 37% solution

Water solubility :	completely miscible
Partition coefficient: n-octanol/water :	no data available
Auto-ignition temperature :	Not applicable
Thermal decomposition :	Heating can release hazardous gases.
Viscosity, dynamic :	No data available
Viscosity, kinematic :	No data available
Explosivity :	Product is not explosive.
Oxidizing properties :	No data available

9.2 Other safety information

Corrosion to metals	Corrosive to metals

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if used as directed.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Gives off hydrogen by reaction with metals.

10.4 Conditions to avoid

Protect from frost, heat and sunlight

Thermal decomposition

Heating can release hazardous gases

10.5 Incompatible materials

Metals, Oxidizing agents, Reducing agents, perchlorates, Sulphides, Peroxides, nitrates

10.6 Hazardous decomposition products

Hydrogen chloride gas

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Toxicity values:

Acute Toxicity

Oral	Please find this information in the listing of the component/components below in this section
Inhalation	No data available
Dermal	No data available

Skin contact: Causes skin burns

Eye contact: Causes eye burns.

Sensitisation: No data available.

CMR

Carcinogenicity	No data available
Mutagenicity	No data available
Reproductive toxicity	No data available

Specific Target Organ Toxicity

Single exposure	May cause respiratory irritation.
Repeated exposure	No data available

Other information: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Acute Toxicity

Oral		LD50 : 2222 mg/kg (Rat) (Calculation method)
Inhalation		LC50 : 45.6 mg/l (Rat, male; 5 min) (No guideline followed)
Dermal		LD50 Dermal : > 5010 mg/kg (Rabbit) 31.5 % solution
Irritation – skin		Result : corrosive effects (Rabbit; 1 - 4 h) (OECD Test Guideline 404)
	eyes	Result : Causes serious eye damage. (Rabbit) (OECD Test Guideline 405)
	sensitisation	Result : not sensitizing (Guinea pig) (Maximisation Test)

CMR	Carcinogenicity : Did not show carcinogenic effects in animal experiments.
	Mutagenicity : In vitro tests did not show mutagenic effects
	Teratogenicity : No valid data available.
	Reproductive toxicity : Animal testing did not show any effects on fertility
Genotoxicity in vitro	negative (Ames test; Salmonella typhimurium; with and without metabolic activation)
	negative (Cytogenetic test; Mouse; with and without metabolic activation)

Specific Target Organ Toxicity

Single exposure	Inhalation : Target Organs: Respiratory system. May cause respiratory irritation.
Repeated exposure	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Other toxic properties

Repeated dose toxicity	NOAEC : 15 mg/m³ (Rat)(Inhalation)

SECTION 12: Ecological information

12.1 Toxicity

Acute Toxicity –

Fish	LC50	20.5 mg/l (Lepomis macrochirus; 24 h)

Acute Toxicity –

Aquatic Invertebrates	EC50	0.45 mg/l Daphnia magna; 48 h) (OECD Test Guideline 202)

Acute Toxicity –

Algae	ErC50	0.73 mg/ll (Chlorella vulgaris (Fresh water algae); 72 h) (End point: Growth rate; OECD Test Guideline 201)]
Bacteria	EC50	0.23 mg/l (activated sludge; 3 h) (End point: Respiration inhibition; OECD Test Guideline 209)

M-Factor

M-Factor (Acute Aquat. Tox.)	1

12.2 Persistence and degradability

Persistence	This product is water soluble
Biodegradability	The methods for determining the biological degradability are not applicable to inorganic substances

12.3 Bioaccumulative potential

Bioaccumulation is not expected.

12.4 Mobility in soil

Soil	Not expected to absorb on soil
Water	The product is water soluble

12.5 Results of PBT and vPvB assessment

The PBT or vPvB criteria of Annex XIII to the REACH Regulation does not apply to inorganic substances

12.6 Other adverse effects

Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration. Harmful effects to aquatic organisms due to pH-shift.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product: Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services

Contaminated packaging: Empty contaminated packaging's thoroughly. They can be recycled after thorough and proper cleaning. If recycling is not practicable, dispose of in compliance with local regulations.

European Waste Catalogue Number: No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal

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SECTION 14: Transport information

14.1 UN Number

UN1789

14.2 UN Proper Shipping Name

ADR : HYDROCHLORIC ACID
RID : HYDROCHLORIC ACID
IMDG : HYDROCHLORIC ACID

14.3 Transport Hazard Class

ADR-Class 8

(Labels; Classification Code; Hazard identification No; Tunnel restriction code)

8; C1; 80; (E)

RID-Class 8

(Labels; Classification Code; Hazard identification No)

8; C1; 80

IMDG-Class 8

(Labels; EmS) 8; F-A, S-B

14.4 Packing Group

ADR : II
RID : II
IMDG : II

14.5 Environmental Hazards

Environmentally hazardous according to ADR : no
Environmentally hazardous according to RID : no
Marine Pollutant according to IMDG-Code : no

14.6 Special Precautions for User

Not applicable

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

IMDG : Not applicable

SECTION 15: Regulatory information

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

EU. REACH, Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC) Point Nos: 3 Listed

EU. Regulation EU No. The substance/mixture does not fall under

649/2012 concerning the export and import of dangerous chemicals	this legislation
EU. Regulation 273/2004, Drug Precursors, Category 3	Scheduled substance Combined Nomenclature (CN) code 2806 10 00; Combined Nomenclature designation
EU. REACH, Annex XVII Marketing and Use Restrictions (Regulation 1907/2006/EC)	Point Nos.: , 3; Listed
EU. Directive 98/8/EC, Annex 1, Active substances in biocidal products	Minimum purity: 999, g/kg; Disinfectants and algaecides not intended for direct application to humans or animals; Special provisions may apply; see text of legislation. Deadline for Compliance: , 30 Apr 2016 Inclusion Date: , 1 May 2014 Expiry Date of Inclusion: , 30 Apr 2024
EU. Regulation No 1451/2007 [Biocides], Annex I, OJ (L 325)	EC Number. 231-595-7; Listed
EU. Directive 2012/18/EU (SEVESO III) Annex	The substance/mixture does not fall under this legislation.
UK. Releases to air and Water (UK ISR)	Annual reporting level threshold: 10,000 kg
WGK (DE)	WGK 1: slightly water endangering: 238; Classification source is Annex 2.

Notification status hydrochloric acid:

Regulatory List	Notification	Notification number
AICS	Yes	
DSL	Yes	
EINECS	Yes	231-595-7
ENCS (JP)	Yes	(1)-215
IECSC	Yes	
ISHL (JP)	Yes	(1)-215
KECI (KR)	Yes	97-1-203
KECI (KR)	Yes	KE-20189
NZIOC	Yes	HSR004090
PICCS (PH)	Yes	
TSCA	Yes	

15.2 Chemical safety assessment

No data available

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

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

Abbreviations and Acronyms

BCF bioconcentration factor
BOD biochemical oxygen demand
CAS Chemical Abstracts Service
CLP Classification, Labelling and Packaging
CMR carcinogenic, mutagenic or toxic to reproduction
COD chemical oxygen demand
DNEL derived no-effect level
EINECS European Inventory of Existing Commercial Chemical Substances
ELINCS European List of Notified Chemical Substances
GHS Globally Harmonized System of Classification and Labelling of Chemicals
LC50 median lethal concentration
LOAEC lowest observed adverse effect concentration
LOAEL lowest observed adverse effect level
LOEL lowest observed effect level
NLP no-longer polymer
NOAEC no observed adverse effect concentration
NOAEL no observed adverse effect level
NOEC no observed effect concentration
NOEL no observed effect level
OECD Organisation for Economic Cooperation and Development
OEL occupational exposure limit
PBT persistent, bioaccumulative and toxic
PNEC predicted no-effect concentration
STOT specific target organ toxicity
SVHC substance of very high concern
UVCB substance of unknown or variable composition, complex reaction products or biological materials
vPvB very persistent and very bioaccumulative

Further Information

Key literature references Supplier information and data from the "Database of

and sources for data	registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet
Methods used for product classification	The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.
Hints for trainings	The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of hazardous materials must be adhered to.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Solmedia Ltd shall not be held liable for any damage resulting from handling or from contact with the above product.