Safety Data Sheet

According to Regulation (EC) no. 1907/2006

Product Name

HYDROCHLORIC ACID, 4N SOLUTION IN 1,4-DIOXANE/ WATER

1.0 Chemical product and company identification

1.1 Product Identifier

MSDS Name:	HYDROCHLORIC ACID, 4N SOLUTION IN 1,4-DIOXANE/ WATER
Substance name:	HYDROCHLORIC ACID, 4N SOLUTION IN 1,4-DIOXANE/ WATER
CAS No:	7647-01-0
PRODUCT CODE:	HYDX

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

Use of the Substance / Mixture:	At this time we do not yet have information of identified uses. They will be included in the safety data sheets when available
Recommended restrictions on use:	At this time we do not yet have information of identified uses. They will be included in the safety data sheets when available

1.3 Details of the supplier of the safety data sheet

Company Identification:
SOLUMETRICS LTD,
UNIT 1B SILEBY ROAD INDUSTRIAL ESTATE. BARROW ON SOAR, LEIC'S. LE12 8LP.

For information call.	**+44 (0)1509 815348**
For emergencies call.	**+44 (0)1509 815348**

2.0 Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) no 1272/2008

SKIN CORROSION/ IRRITATION	CATEGORY 2
SERIOUS EYE DAMAGE/ EYE IRRATATION	CATEGORY 2
CARCINOGENICITY	CATEGORY 2
SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (SINGLE EXPOSURE)	CATEGORY 3
FLAMMABLE LIQUIDS	CATEGORY 2

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Symbols	F - Highly Flammable Xn - Harmfull
R - Phrases	R11 - Highly Flammable R19 - May form explosive peroxides R40 - Limited evidence of a carcinogenic effects R66 - Repeated exposure may cause skin dryness or cracking
Risk Combination Phrases	R36/37/38 - Irritating to eyes, respiratory system and skin

2.2 Label Elements

Labelling according to regulation (EC) No 1272/2008

HAZARDS SYMBOLS

Signal Word:	DANGER
Hazard Statements:	
H351	SUSPECTED OF CAUSING CANCER
H335	MAY CAUSE RESPIRATORY IRRITATION
H319	CAUSES SERIOUS EYE IRRITATION
H315	CAUSES SKIN IRRITATION
H225	HIGHLY FLAMMABLE LIQUID AND VAPOR
EU019	MAY FORM EXPLOSIVE PEROXIDES
EUH066	REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING
Precautionary statements	EU (28,1272/2008)
P280	Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338	If in EYES: Rinse cautiously with water for several minutes. Remove contct lenses, if present and easy to do continue rinsing
P301 + P330 + P331	If SWALLOWED: rinse mouth. Do NOT induce vomiting
P310	Immediately call a poison center or doctor / physican
P281	Use personal protective equipment as required
P261	Avoid breathing dust/fumes/gas/mist/vapors/spray
P233	Keep containers tightly closed
P301 + P312	If SWALLOWED: Call a POISON CENTER or doctor / physician if you feel unwell
P304 + P340	If INHALED: Remove victim to fresh air and keep at rest in a
P280	Wear protective gloves/ protective clothing/ eye protection/ face 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.
P210	Keep away from heat/sparks/open flames/hot surfaces - No Smoking
P240	Ground/Bond container and receiving equipment
Other Hazards	No information available

3.0 Composition/ Information on ingredients

3.1 Substances

EC No	Component	GHSCLAS	Classification
EEC No. 204-661-8	**1,4-Dioxane 123-91-1**	Eye Irrit. 2 (H319) Carc. 2 (H351) STOT SE 3 (H335) Flam.Liq.2 (h225) (EUH019) (EUH066)	F;R11 R19 CARC.CAT.3;R40 Xi;R36/37 R66
231-595-7	**Hydrochloric Acid 7647-01-0**	Skin Corr. 1B (H314) STOT SE 3 (H335)	C;R34 Xi; R37

Weight %	CAS No
65	123-91-1
15	7647-01-0

4.0 First Aid measures

4.1 Description of first aid measures

General Advice

If Inhaled:	Remove from exposure, lie down move to fresh air if breathing is difficult, give oxygen if not breathing, give artifical respiration immediate medical attention is required

In Case of Skin contact:	Wash off immediately with plenty of water for at least 15minutes. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty
In case of eye contact:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult an eye specialist immediately. Go to an ophthalmic hospital if possible
If Swallowed:	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed
4.3 Indication of immediate medical attention and special treatment needed

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5.0 FIRE FIGHTING MEASURES
5.1 Extinguishing media

Suitable extinguishing Media:	Dike fire-control water for later disposal Cool closed containers exposed to fire with water spray Carbon Dioxide (CO2) Dry Chemical Foam
Un-Suitable extinguishing Media:	Water may be ineffective

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting:	Flammable Vapors may form explosive mixtures with air vapors may travel to source of ignition and flash back containers may explode when heated

5.3 Advice for fire-fighters

Special protective equipment for fire-fighters:	Vapors are heavier than air and may spread alon floors as in any fire, wear self contained breathing apparatus pressure-demandMSHA/NIOSH (approved or equivalent) and full protective gear.
Further Information:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains

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6.0 Accidental release measures
6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions:	Use personal protective equipment. Keep away unprotected persons. Danger of slipping if spilled. Avoid contact with skin and eyes. Do not breathe vapours or spray mist. Ensure adequate ventilation
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:	Soak up inert absorbent material (e.g sand, silica gel, acid binder, universal binder, sawdust) Prevent product from entering drains. Keep in suitable and closed containers for disposal. Remove all sources or ignition. Use spark-proof tools and explosion-proof equipment/ Provide adequate ventilation. Do not flush surface water or sanitary sewer system. Do not expose spill to water. Do not let this chemical enter the environment

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7.0 Handling and storage
7.1 Precautions for safe handling

Advice on safe handling:

Do not breath dust Do not breath vapors or spray mist. Do not get in eyes on skin or on clothing. Use only in area provided with appropriate exhaust ventilation. Use only non-sparking tools contents may develop pressure upon prolonged storage protect from moisture use caution when opening. Keep containers dry and tightly closed to avoid moisture absorption and contamination

Hygiene measures:

Keep away from food, drink and animal feeding stuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately. Avoid contact with the skin and the eyes. Do not breathe vapours or spray mist.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage area containers:

Keep in a dry, cool and well ventilated place Keep container tightly closed Keep away from heat source or ignition. Keep away from direct sunlight flammables area. Do not store in metal containers Keep under nitrogen

Further information on storage conditions:

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

8.0 Exposure controls/ personal protection

8.1 Control parameters

Exposure Limits

This product, as supplied does not contain and hazardous material with occupational exposure linits established by the region regulatory bodies

Component
1,4-Dioxane

European Union	NA
The United Kingdom	NA
France	VME: 10PPM - VME:35mg/m3 - VLCT: 140mg/m3 - VLCT: 40ppm
Belgium	TWA: 25ppm - TWA: 91mg/m3
Spain	VLA-ED: 20 ppm - VLA-ED: 74mg/m3
Italy	NA
Portugal	TWA: 20 ppm
The Netherlands	NA
Finland	TWA: 25ppm - TWA:91mg/m3 - STEL: 40ppm - STEL: 150 mg/m3
Denmark	TWA:36mg/m3 - TWA:10ppm
Austria	STEL:146mg/m3 - STEL:40ppm - MAK:20ppm - MAK:73mg/m3
Switzerland	STEL:144mg/m3 - STEL: 40ppm - MAK:20ppm - MAK:72mg/m3
Poland	NDS:50mg/m3
Norway	TWA:18mg/m3 - TW:5ppm
Ireland	TWA:72mg/3 - TWA:20ppm Skin

Component
Hydrochloric Acid

European Union	NA
The United Kingdom	STEL: 5ppm - STEL: 8mg/m3
France	VLCT: 7.6mg/m3 - VLCT: 5ppm
Belgium	STEL: 10ppm - STEL: 15mg/m3 - TWA: 5ppm - TWA: 8mg/m3
Spain	VLA-EC: 10 ppm - VLA-EC: 15mg/m3 - VLA-ED: 5 ppm - VLA-ED: 7.6mg/m3
Italy	NA
Portugal	TWA:20ppm
The Netherlands	NA
Finland	TWA:25ppm - TWA:91mg/m3 - STEL:40ppm
Denmark	TWA:36mg/m3 - TWA:10ppm
Austria	STEL:15mg/m3 - STEL:10ppm - MAK:5ppm - MAK:8mg/m3
Switzerland	STEL:6mg/m3 - STEL: 4ppm - MAK:3.0ppm - MAK:2mg/m3
Poland	NDSCh:10mg/m3 - NDS:5mg/m3

Norway	Ceiling:5ppm - Celing:7mg/m3
Ireland	TWA:7mg/3 - TWA:5ppm - STEL:10ppm - STEL:14mg/m3

Derived No Effect Level (DNEL)	No Data available
Prediction No Effect Concentration (PNEC)	No Data available

8.2 Exposure controls

Engineering measures	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are closed to the workshop location

Personal protective equipment

Eye Protection	Goggles
Hand Protection	Protective Gloves
Skin and body protection	Wear appropriate gloves and clothing to prevent skin exposure
Respiratory Protection	Follow the OSHA respirator regulations found in 29CFR 1910.134 European standards EN149. Use a NIOSH/MSHA or European Standards EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice
Enviromental exposure controls	No data avalible

9.0 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Apperance	Colourless
Boiling Point/ Range	No Data Available
Melting Point/ Range	No Data Available
Flash Point	12C / 53.6F
Molecular Weight	36.45
Molecular Formula	Cl H

10.0 Stability and reactivity

10.1 Reactivity	May form explosive peroxides.
10.2 Chemical stability	Stable under normal conditions

10.3 Possibility of hazardous reactions

Hazardous reaction:	No data avalible
10.4 Conditions to avoid	Avoid shock and friction. Excess heat, Exposure to air, Exposure to light, Incompatible products

11.0 Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity

Product Information	Product does not present an acute toxicity hazard based on known or supplied information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
1,4- Dioxane	**4200 mg/kg (Rat)**	7600 mg/kg (Rabbit)	48.5mg/L (Rat) 4h
Hydrochloric Acid	**700 mg/kg (Rat)**	5010 mg/kg (Rabbit)	3124 ppm (Rat) 1h

Chronic Toxicity		
The table below indicates wheather each agency has listed any ingredient as a carcinogen		
	IARC	UK
1,4- Dioxane	Group 2B	
Hydrochloric Acid	Group 3	

SENSITIZATION	NO DATA AVAILABLE
MUTEGENIC EFFECTS	NO DATA AVAILABLE
REPRODUCTION EFFECTS	NO DATA AVAILABLE
DEVELOPMENT EFFECTS	NO DATA AVAILABLE
TARGET ORGANS	NO DATA AVAILABLE
OTHER ADVERSE EFFECTS	SEE ACTUAL ENTRY IN RTECS FOE COMPLETE INFORMATION
ENDOCRINE DISRUPTOR INFORMATION	NO DATA AVAILABLE

12.0 Ecological Information

12.1 Toxicity

Component 1,4-Dioxane

FREASHWATER ALGAE	NA
FREASHWATER FISH	10000mg/L LC50 96h - 9850mg/L LC50 96h - 10306 14742 mg/L - LC50 96h
MICROTOX	EC50= 610mg/L 5min - EC50 = 668mg/L15min - EC50 = 733mg/L 30min
WATER FLEA	EC50 = 163mg/L 48h

Component Hydrochloric Acid

FREASHWATER ALGAE	NA
FREASHWATER FISH	282mg/L LC50 96h
MICROTOX	NA
WATER FLEA	

Persistence and degradability	**No information available**
Bioaccumulative Potential	
	No information available

Component	Log Pow
1,4-Dioxane	0

Mobility in soil	**No information available**
Results of PBT and vPvB assessment	
Other adverse effects	**No information available**

13.0 Disposal considerations

13.1 Waste treatment methods

Product	Disposal together with normal waste is not allowed. Special disposal required to local regulations. Do not let product enter drains. Contact waste disposal services.
Contaminated Packaging	Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. Packagings that cannot be cleaned are to be disposed of in the same manner as the product.

14.0 Transport information

14.1 UN number	2924
IMDG/IMO	
UN Number	2924

Hazard Class	3
Subsidiary Hazard Class	8
Packing group	II

ADR

UN Number	2924
Hazard Class	3
Subsidiary Hazard Class	8
Packing group	II

IATA

UN Number	2924
Hazard Class	3
Subsidiary Hazard Class	8
Packing group	II

15.0 Regulatory Information

	Component 1,4-Dioxane
EINECS	204-661-8
ELINCS	-
NLP	
TSCA	X
DSL	X
NDSL	-
PICCS	X
ENCS	X
CHINA	X
AICS	X
KECL	KE-10463X

	Component Hydrochloric Acid
EINECS	231-595-7
ELINCS	-
NLP	
TSCA	T
DSL	X
NDSL	-
PICCS	X
ENCS	X
CHINA	X
AICS	X
KECL	KE-20189X

TSCA	United States Toxic Substance Control Act 8 (b) Inventory
EINECS/ELINCS	European Inventory Lists
DSL/NDSL	Canadian Domestic Substances list/ Non-Domestic Substance list
PICCS	Philippines Inventory of chemicals and chemical substances
ENCS	Japan Existing and New chemical substances
CHINA	China Inventory of existing chemical substances
AICS	Inventory of chemical substances
KECL	Existing and evaluated chemical substances

16.0 Other information

Full text of R-Phrases referred to under section 2 and 3

R - Phrases	R11 - Highly Flammable R19 - May form explosive peroxides R40 - Limited evidence of a carcinogenic effects R66 - Repeated exposure may cause skin dryness or cracking
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H225	HIGHLY FLAMMABLE LIQUID AND VAPOR
EU019	MAY FORM EXPLOSIVE PEROXIDES
EUH066	REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING

Other information

This information is based upon Solumetrics Ltd Knowledge of this product at the time this Safety Data Sheet was prepared. It is given in good faith and no warranty is implied. The information is belived to be correct but does not purport to be all inclusive and shall be used only as a guide. The user must satisfy him/her self as to the purpose this product is put to and the possible change in classification should this product be mixed or formulated with other compounds