Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name | **Hydrochloric Acid 37%**

Synonyms | Aqueous Hydrogen Chloride; Muriatic Acid

Product Code | 70474

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

Relevant identified use(s) | Semiconductor Uses

1.3 Details of the supplier of the safety data sheet

Manufacturer | Air Liquide

2700 Post Oak Blvd.
Houston, TX 77056
United States
www.us.airliquide.com
sds@airliquide.com

Telephone (Technical) | 713-896-2896

Telephone (Technical) | 800-819-1704

1.4 Emergency telephone number

Manufacturer | 800-424-9300 - CHEMTREC

Manufacturer | +1 703-527-3887 - Outside United States

Section 2: Hazards Identification

EU/EEC

According to Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP | Skin Corrosion 1B - H314
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation - H335

DSD/DPD | Corrosive (C)
Irritant (Xi)
R34, R37

2.2 Label Elements

CLP

DANGER

Hazard statements | H314 - Causes severe skin burns and eye damage.
H335 - May cause respiratory irritation

Precautionary statements

Prevention | P260 - Do not breathe mist/vapours/spray.
P264 - Wash thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response | P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P310 - Immediately call a POISON CENTER or doctor/physician.
P321 - Specific treatment, see supplemental first aid information.
P363 - Wash contaminated clothing before reuse.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage/Disposal | P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

DSD/DPD

Risk phrases | R34 - Causes burns.
R37 - Irritating to respiratory system.

Safety phrases | S36 - Wear suitable protective clothing.
S37 - Wear suitable gloves.
S39 - Wear eye/face protection.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other Hazards

CLP | According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

DSD/DPD | This product is considered dangerous according to the European Directive 67/548/EEC.

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012 | Skin Corrosion 1B - H314
Serious Eye Damage 1 - H318

2.2 Label elements

OSHA HCS 2012

DANGER

Hazard statements | Causes severe skin burns and eye damage. - H314
Causes serious eye damage - H318

Precautionary statements

Prevention | Do not breathe mist/vapours/spray. - P260
Wash thoroughly after handling. - P264
Wear protective gloves/protective clothing/eye protection/face protection. - P280

Response | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. - P304+P340
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. - P303+P361+P353
Immediately call a POISON CENTER or doctor/physician. - P310
Specific treatment, see supplemental first aid information. - P321
Wash contaminated clothing before reuse. - P363
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. - P305+P351+P338
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. - P301+P330+P331

Storage/Disposal | Store locked up. - P405
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

2.3 Other hazards

OSHA HCS 2012 | Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to WHMIS

2.1 Classification of the substance or mixture

WHMIS | Very Toxic - D1A
Other Toxic Effects - D2A
Corrosive - E

2.2 Label elements

WHMIS

| Very Toxic - D1A
Other Toxic Effects - D2A
Corrosive - E

2.3 Other hazards

WHMIS | In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

2.4 Other information

NFPA

Section 3 - Composition/Information on Ingredients

3.1 Substances

Composition				
Chemical Name	**Identifiers**	**%**	**LD50/LC50**	**Classifications According to Regulation/Directive**
Hydrochloric acid	**CAS:**7647-01-0 **EC Number:**231-595-7 **EU Index:**017-002-00-2	25% TO 38%	Ingestion/Oral-Rabbit LD50 • 900 mg/kg Inhalation-Rat LC50 • 45000 mg/m³ 5 Minute(s)	**EU DSD/DPD:** Annex I - C; R34 Xi; R37 **EU CLP:** Annex VI - Skin Corr. 1B, H314; STOT SE 3: Resp. Irrit; H335 **OSHA HCS 2012:** Eye Dam. 1; Skin Corr. 1B

3.2 Mixtures

| Material does not meet the criteria of a mixture in accordance with Regulation (EC) No 1272/2008.

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation

| Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.

Skin

| For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing. Get medical attention immediately.

Eye

| Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Get medical attention immediately.

Ingestion

| If swallowed, rinse mouth with water (only if the person is conscious) Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Give plenty of water to drink. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

| Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician

| All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media

| LARGE FIRES: Dry chemical, CO2, alcohol-resistant foam or water spray.
SMALL FIRES: Dry chemical, CO2 or water spray.

Unsuitable Extinguishing Media

| No data available

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards

| Containers may explode when heated.
Acid reacts with most metals to release hydrogen gas, which can form explosive mixtures with air.
A large amount of heat is generated when highly concentrated hydrofluoric acid solutions are diluted with water.

Hazardous Combustion Products | Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive fumes.

5.3 Advice for firefighters

| Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
Wear positive pressure self-contained breathing apparatus (SCBA).
SMALL FIRES: Move containers from fire area if you can do it without risk.
Runoff from fire control may cause pollution.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions | Ventilate enclosed areas. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Emergency Procedures | ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

6.2 Environmental precautions

| Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures | Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
Dike to collect large liquid spills.
A vapor suppressing foam may be used to reduce vapors.
Use water spray to reduce vapors or divert vapor cloud drift.
Neutralize residue with sodium bicarbonate, soda ash, slaked lime or other appropriate neutralizing agent. Test area with litmus paper to ensure neutralization is complete.

6.4 Reference to other sections

| Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling | Handle and open container with care. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapours, spray. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage | Keep container tightly closed. Store in a cool, dry, well-ventilated place. Keep away from incompatible materials. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

7.3 Specific end use(s)

| Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Canada Ontario	Canada Quebec	China	France
Hydrochloric acid (7647-01-0)	Ceilings	2 ppm Ceiling	2 ppm Ceiling	5 ppm Ceiling; 7.5 mg/m3 Ceiling	7.5 mg/m3 Ceiling [MAC]	Not established
	STELs	Not established	Not established	Not established	Not established	5 ppm STEL [VLCT]; 7.6 mg/m3 STEL [VLCT]

Exposure Limits/Guidelines (Con't.)						
	Result	Germany DFG	Germany TRGS	Ireland	Israel	Italy
Hydrochloric acid (7647-01-0)	STELs	Not established	Not established	10 ppm STEL; 15 mg/m3 STEL	Not established	10 ppm STEL; 15 mg/m3 STEL
	TWAs	Not established	2 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 2); 3 mg/m3 TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 2)	5 ppm TWA; 8 mg/m3 TWA	Not established	5 ppm TWA; 8 mg/m3 TWA
	Ceilings	4 ppm Peak; 6 mg/m3 Peak	Not established	Not established	2 ppm Ceiling	Not established
	MAKs	2 ppm TWA MAK; 3.0 mg/m3 TWA MAK	Not established	Not established	Not established	Not established

Exposure Limits/Guidelines (Con't.)						
	Result	NIOSH	OSHA	OSHA Vacated	Portugal	Spain
Hydrochloric acid (7647-01-0)	Ceilings	5 ppm Ceiling; 7 mg/m3 Ceiling	5 ppm Ceiling; 7 mg/m3 Ceiling	5 ppm Ceiling; 7 mg/m3 Ceiling	2 ppm Ceiling [VLE-CM]	Not established
	STELs	Not established	Not established	Not established	Not established	10 ppm STEL [VLA-EC]; 15 mg/m3 STEL [VLA-EC]
	TWAs	Not established	Not established	Not established	Not established	5 ppm TWA [VLA-ED] (indicative limit value); 7.6 mg/m3 TWA [VLA-ED] (indicative limit value)

Exposure Limits/Guidelines (Con't.)		
	Result	Sweden
Hydrochloric acid (7647-01-0)	Ceilings	5 ppm CLV; 8 mg/m3 CLV

8.2 Exposure controls

Engineering Measures/Controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face | Wear chemical splash safety goggles.

Skin/Body | Wear appropriate gloves.

Environmental Exposure Controls | Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

MAK = Maximale Arbeitsplatz Konzentration is the maximum permissible concentration

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures

TWAEV = Time-Weighted Average Exposure Value

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Clear to light yellow (orange tint for inhibited grades) fuming liquid with a pungent, choking odor.
Color	Clear to light-yellow.	Odor	Pungent
Odor Threshold	1 to 5 ppm (detection)		
General Properties			
Boiling Point	48 to 61 C(118.4 to 141.8 F)	Melting Point	-26 to -30 C(-14.8 to -22 F)
Decomposition Temperature	Data lacking	pH	< 1
Specific Gravity/Relative Density	< 1.18 Water=1	Water Solubility	Soluble
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Hydrochloric acid solutions of greater than 28% are very volatile and can readily release high concentrations of hydrogen chloride gas.		
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable

10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4 Conditions to avoid

Excess heat.

10.5 Incompatible materials

Hydrochloric Acid is incompatible with metals (e.g. steel, copper, brass or zinc), sodium, bases, formaldehyde, oxidizing agents (e.g. hydrogen peroxide, chlorates or chlorites), reducing agents (e.g. metal hydrides), perchloric acid, sulfuric acid, potassium permanganate, aldehydes or epoxides, fluorine, acetylides (e.g. cesium acetylide or rubidium acetylide), borides (e.g. magnesium boride), carbides (e.g. rubidium carbide), phosphide (e.g. uranium phosphide) or silicides (e.g. lithium silicide), hexalithium disilicide. Mixing 36% hydrochloric acid with acetic anhydride or chlorosulfonic acid or oleum or propiolactone or propylene oxide or vinylacetate in a closed container caused the temperature and pressure to increase.

10.6 Hazardous decomposition products

Combustion: Involvement in fire can release hydrogen and chlorine gases. Hydrolysis: Heat.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

GHS Properties	Classification
Acute toxicity	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met
Aspiration Hazard	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met
Carcinogenicity	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met
Germ Cell Mutagenicity	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met
Skin corrosion/Irritation	**EU/CLP** • Skin Corrosion 1B **OSHA HCS 2012** • Skin Corrosion 1B
Skin sensitization	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met
STOT-RE	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met

STOT-SE	**EU/CLP** • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation **OSHA HCS 2012** • Classification criteria not met
Toxicity for Reproduction	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met
Respiratory sensitization	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Classification criteria not met
Serious eye damage/Irritation	**EU/CLP** • Classification criteria not met **OSHA HCS 2012** • Serious Eye Damage 1

Potential Health Effects

Inhalation

Acute (Immediate) | May cause respiratory irritation. May cause corrosive burns - irreversible damage.

Chronic (Delayed) | Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin

Acute (Immediate) | Causes severe skin burns and eye damage.

Chronic (Delayed) | Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

Acute (Immediate) | Causes serious eye damage.

Chronic (Delayed) | Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

Acute (Immediate) | May cause irreversible damage to mucous membranes.

Chronic (Delayed) | Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal distrubances.

Section 12 - Ecological Information

12.1 Toxicity

| Material data lacking.

12.2 Persistence and degradability

| Material data lacking.

12.3 Bioaccumulative potential

| Material data lacking.

12.4 Mobility in Soil

| Material data lacking.

12.5 Results of PBT and vPvB assessment

| No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

| No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste | Dispose of content and/or container in accordance with local, regional, national, and/or

international regulations.

Packaging waste | Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1789	Hydrochloric acid	8	II	NDA
TDG	UN1789	HYDROCHLORIC ACID	8	II	NDA
IMO/IMDG	UN1789	HYDROCHLORIC ACID	8	II	NDA
IATA/ICAO	UN1789	Hydrochloric acid	8	II	NDA

14.6 Special precautions for user | None known.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not relevant.

Section 15 - Regulatory Information

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

SARA Hazard Classifications | Acute

State Right To Know				
Component	**CAS**	**MA**	**NJ**	**PA**
Hydrochloric acid	7647-01-0	Yes	Yes	Yes

Inventory						
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**China**	**EU EINECS**	**EU ELNICS**
Hydrochloric acid	7647-01-0	Yes	No	Yes	Yes	No

Inventory (Con't.)		
Component	**CAS**	**TSCA**
Hydrochloric acid	7647-01-0	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Hydrochloric acid	7647-01-0	A, D1A, E (listed under Hydrogen chloride); D1A, E; E (0.036% in aqueous solution, 0.36% in aqueous solution, 3.6% in aqueous solution); D1B, E (28% in aqueous solution); D1A, E (31.45% in aqueous solution, 35.2% in aqueous solution)

Canada - WHMIS - Ingredient Disclosure List

• Hydrochloric acid	7647-01-0	1 %

Environment

Canada - CEPA - Priority Substances List

• Hydrochloric acid	7647-01-0	Not Listed

China

Environment

China - Ozone Depleting Substances - First Schedule

• Hydrochloric acid	7647-01-0	Not Listed

China - Ozone Depleting Substances - Second Schedule

• Hydrochloric acid	7647-01-0	Not Listed

China - Ozone Depleting Substances - Third Schedule

• Hydrochloric acid	7647-01-0	Not Listed

Other

China - Annex I & II - Controlled Chemicals Lists

• Hydrochloric acid	7647-01-0	Not Listed

China - Dangerous Goods List

• Hydrochloric acid	7647-01-0	(anhydrous, refrigerated liquid or Hydrochloric acid)

China - Export Control List - Part I Chemicals

• Hydrochloric acid	7647-01-0	Not Listed

Europe

Other

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

• Hydrochloric acid	7647-01-0	T; R23 C; R35

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits

• Hydrochloric acid	7647-01-0	Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

• Hydrochloric acid	7647-01-0	T C R:23-35 S:(1/2)-9-26-36/37/39-45

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations

• Hydrochloric acid	7647-01-0	5

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases

• Hydrochloric acid	7647-01-0	S:(1/2)-9-26-36/37/39-45

Germany

Environment

Germany - TA Luft - Types and Classes

• Hydrochloric acid	7647-01-0	Not Listed

Germany - Water Classification (VwVwS) - Annex 1

• Hydrochloric acid	7647-01-0	Not Listed

Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes

• Hydrochloric acid	7647-01-0	ID Number 238, hazard class 1 - low hazard to waters (footnote 8)

Germany - Water Classification (VwVwS) - Annex 3

• Hydrochloric acid	7647-01-0	Not Listed

Other

Germany - Specifically Regulated Chemicals in TRGS

• Hydrochloric acid	7647-01-0	Not Listed

Portugal

Other

Portugal - Prohibited Substances

• Hydrochloric acid	7647-01-0	Not Listed

United Kingdom

Environment

United Kingdom - Pollution Inventory - Schedule 1 - Thresholds for Releases to Air

• Hydrochloric acid	7647-01-0	10000 kg

Other

United Kingdom - Workplace Exposure Limits (WELs) - Substances in Review

• Hydrochloric acid	7647-01-0	Not Listed

United Kingdom - List of Dangerous Substances in Water

• Hydrochloric acid	7647-01-0	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Hydrochloric acid	7647-01-0	5000 lb TQ; 5000 lb TQ (anhydrous)

U.S. - OSHA - Specifically Regulated Chemicals

• Hydrochloric acid	7647-01-0	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Hydrochloric acid	7647-01-0	

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Hydrochloric acid	7647-01-0	5000 lb final RQ; 2270 kg final RQ

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Hydrochloric acid	7647-01-0	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Hydrochloric acid	7647-01-0	5000 lb EPCRA RQ (gas only)

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Hydrochloric acid	7647-01-0	500 lb TPQ (gas only)

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Hydrochloric acid	7647-01-0	1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Hydrochloric acid	7647-01-0	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Hydrochloric acid	7647-01-0	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Hydrochloric acid	7647-01-0	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Hydrochloric acid	7647-01-0	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Hydrochloric acid	7647-01-0	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Hydrochloric acid	7647-01-0	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Hydrochloric acid	7647-01-0	Not Listed

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

• Hydrochloric acid	7647-01-0	

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Hydrochloric acid	7647-01-0	Not Listed

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Last Revision Date 23/December/2014

Preparation Date 23/December/2014

Disclaimer/Statement of Liability To the best of Air Liquide's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is

combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

Key to abbreviations

NDA = No data available