

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 02-Mar-2009 Revision Date 17-Jul-2024 Revision Number 5

# SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: <u>Hydrochloric acid, 10% v/v aqueous solution</u>

Cat No.: 35611

Synonyms Muriatic acid ; Hydrogen chloride ; HCl

Unique Formula Identifier (UFI) 8WA3-1RXU-0S2P-VUNS

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company

Avocado Research Chemicals Ltd. (Part of Thermo Fisher Scientific)

Shore Road, Heysham Lancashire, LA3 2XY, United Kingdom

Office Tel: +44 (0) 1524 850506 Office Fax: +44 (0) 1524 850608

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

Poison Centre - Emergency information services

Ireland: National Poisons Information Centre (NPIC) -

01 809 2166 (8am-10pm, 7 days a week)

Malta: +356 2395 2000 Cyprus: +357 2240 5611

## **SECTION 2: HAZARDS IDENTIFICATION**

## 2.1. Classification of the substance or mixture

GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

**Physical hazards** 

Substances/mixtures corrosive to metal Category 1 (H290)

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#### **Health hazards**

Based on available data, the classification criteria are not met

#### **Environmental hazards**

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

## 2.2. Label elements



## Signal Word

#### Warning

#### **Hazard Statements**

H290 - May be corrosive to metals

## **Precautionary Statements**

P234 - Keep only in original packaging P390 - Absorb spillage to prevent material damage

## 2.3. Other hazards

This product does not contain any known or suspected endocrine disruptors Toxic to terrestrial vertebrates

## **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

## 3.2. Mixtures

Component	CAS No	EC No	Weight %	GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Water	7732-18-5	231-791-2	>90 - 99	-
Hydrochloric acid	7647-01-0	231-595-7	>1 - <10	Met. Corr. 1 (H290) Skin Corr. 1B (H314) Eye Dam. 1 (H318) STOT SE 3 (H335)

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
Hydrochloric acid	Skin Corr. 1B :: C>=25% Skin Irrit. 2 :: 10%<=C<25% Eye Irrit. 2 :: 10%<=C<25% STOT SE 3 :: C>=10% Met. Corr. 1 :: C>=0.1%	-	-

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Components	Reach Registration Number	
Hydrochloric acid	01-2119484862-27	

Full text of Hazard Statements: see section 16

## **SECTION 4: FIRST AID MEASURES**

#### 4.1. Description of first aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get

medical attention.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists,

call a physician.

**Ingestion** Clean mouth with water and drink afterwards plenty of water.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if

symptoms occur.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination.

#### 4.2. Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

## **SECTION 5: FIREFIGHTING MEASURES**

#### 5.1. Extinguishing media

## **Suitable Extinguishing Media**

Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.

#### Extinguishing media which must not be used for safety reasons

No information available.

## 5.2. Special hazards arising from the substance or mixture

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

#### **Hazardous Combustion Products**

Hydrogen chloride gas.

## 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

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#### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation.

#### 6.2. Environmental precautions

Should not be released into the environment.

#### 6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

#### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

## **SECTION 7: HANDLING AND STORAGE**

#### 7.1. Precautions for safe handling

Ensure adequate ventilation. Wear personal protective equipment/face protection. Avoid ingestion and inhalation. Do not get in eyes, on skin, or on clothing.

## **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

#### 7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep only in the original container.

Technical Rules for Hazardous Substances (TRGS) 510 Class 12 Storage Class (LGK) (Germany)

#### 7.3. Specific end use(s)

Use in laboratories

## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### 8.1. Control parameters

## **Exposure limits**

List source(s): **EU** - Commission Directive (EU) 2019/1831 of 24 October 2019 establishing a fifth list of indicative occupational exposure limit values pursuant to Council Directive 98/24/EC and amending Commission Directive 2000/39/EC **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **IRE** - 2021 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Hydrochloric acid	STEL: 5 ppm 15 min	TWA: 5 ppm 8 hr	TWA: 8 mg/m <sup>3</sup> 8 hr. F
	STEL: 8 mg/m <sup>3</sup> 15 min	TWA: 8 mg/m <sup>3</sup> 8 hr	TWA: 5 ppm 8 hr.
	TWA: 1 ppm 8 hr	STEL: 10 ppm 15 min	STEL: 10 ppm 15 min
	TWA: 2 mg/m <sup>3</sup> 8 hr	STEL: 15 mg/m <sup>3</sup> 15 min	STEL: 15 mg/m <sup>3</sup> 15 min

#### **Biological limit values**

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This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

#### Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

See table for values

Component	Acute effects (Inhalation				nic effects c (Inhalation)
Hydrochloric acid 7647-01-0 ( >1 - <1		ng/m³	DNE	L = 8mg/m <sup>3</sup>	

#### **Predicted No Effect Concentration (PNEC)**

No information available.

#### 8.2. Exposure controls

#### **Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that evewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

#### Personal protective equipment

**Eve Protection** Goggles (European standard - EN 166)

**Hand Protection** Protective gloves

	Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
	Butyl rubber	> 480 minutes	0.20 mm	Level 6	As tested under EN374-3 Determination of
	Neoprene	> 480 minutes	0.35 mm	EN 374	Resistance to Permeation by Chemicals
	Nitrile rubber	> 480 minutes	0.45 mm		·
İ	PVC	> 480 minutes	0.18 mm		
	Viton (R)	> 480 minutes	0.30 mm		

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Respiratory Protection** 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 if irritation or other symptoms are experienced.

To protect the wearer, respiratory protective equipment must be the correct fit and be used

and maintained properly

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits

are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Particulates filter conforming to EN 143

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Small scale/Laboratory use

No personal respiratory protective equipment normally required

When RPE is used a face piece Fit Test should be conducted

Liquid

**Environmental exposure controls** No information available.

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

## 9.1. Information on basic physical and chemical properties

Physical State Liquid

Appearance Colorless Odor Odorless

Odor Threshold
Melting Point/Range
No data available
No data available
No data available

**Boiling Point/Range** 100 - 103 °C / 212 - 217.4 °F

Flammability (liquid) No data available Flammability (solid,gas) Not applicable

Flammability (solid,gas) Not applicable

Explosion Limits No data available

Flash Point Not applicable Method - No information available

Autoignition TemperatureNo data availableDecomposition TemperatureNo data available

**pH** 1

Viscosity No data available

Water Solubility Miscible

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Vapor Pressure No data available
Density / Specific Gravity 1.00-1.05

Bulk DensityNot applicableLiquidVapor DensityNo data available(Air = 1.0)

Particle characteristics Not applicable (liquid)

## 9.2. Other information

## **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity

None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

Strong oxidizing agents. Reducing Agent. Bases. Metals.

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#### 10.6. Hazardous decomposition products

Hydrogen chloride gas.

## **SECTION 11: TOXICOLOGICAL INFORMATION**

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### **Product Information**

(a) acute toxicity:

Based on ATE data, the classification criteria are not met Oral Based on ATE data, the classification criteria are not met **Dermal** Based on ATE data, the classification criteria are not met Inhalation

#### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	=	•	•
Hydrochloric acid	238 - 277 mg/kg (Rat)	> 5010 mg/kg (Rabbit)	1.68 mg/L (Rat)1 h

Based on available data, the classification criteria are not met (b) skin corrosion/irritation;

Bridging principle "Dilution"

Based on available data, the classification criteria are not met (c) serious eye damage/irritation;

Bridging principle "Dilution"

(d) respiratory or skin sensitization;

Based on available data, the classification criteria are not met Respiratory Skin

Based on available data, the classification criteria are not met

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

Based on available data, the classification criteria are not met (f) carcinogenicity;

There are no known carcinogenic chemicals in this product

Based on available data, the classification criteria are not met (g) reproductive toxicity;

(h) STOT-single exposure; Based on available data, the classification criteria are not met

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

**Target Organs** None known.

Based on available data, the classification criteria are not met (j) aspiration hazard;

Symptoms / effects,both acute and No information available.

delayed

#### 11.2. Information on other hazards

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**Endocrine Disrupting Properties** 

Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## **SECTION 12: ECOLOGICAL INFORMATION**

#### 12.1. Toxicity

**Ecotoxicity effects** 

Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Hydrochloric acid	282 mg/L LC50 96 h Gambusia	56mg/L EC50 72h Daphnia	-
	affinis		
	mg/L LC50 48 h Leucscus idus		

Component	Microtox	M-Factor
Hydrochloric acid	-	

#### 12.2. Persistence and degradability

**Persistence** 

Miscible with water, Persistence is unlikely, based on information available.

#### 12.3. Bioaccumulative potential Bioaccumulation is unlikely

The product is water soluble, and may spread in water systems. Will likely be mobile in the 12.4. Mobility in soil

environment due to its water solubility. Highly mobile in soils

#### 12.5. Results of PBT and vPvB

assessment

No data available for assessment.

#### 12.6. Endocrine disrupting

properties

**Endocrine Disruptor Information** This product does not contain any known or suspected endocrine disruptors

#### 12.7. Other adverse effects

**Persistent Organic Pollutant Ozone Depletion Potential** 

This product does not contain any known or suspected substance This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment methods

Waste from Residues/Unused

**Products** 

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point.

According to the European Waste Catalog, Waste Codes are not product specific, but **European Waste Catalogue (EWC)** 

application specific.

Other Information Waste codes should be assigned by the user based on the application for which the product

was used. Do not empty into drains. Do not flush to sewer. Solutions with low pH-value

must be neutralized before discharge.

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## **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

**14.1. UN number** UN1789

14.2. UN proper shipping name HYDROCHLORIC ACID, SOLUTION

14.3. Transport hazard class(es) 8 14.4. Packing group III

ADR

**14.1. UN number** UN1789

14.2. UN proper shipping name HYDROCHLORIC ACID SOLUTION

14.3. Transport hazard class(es) 8 14.4. Packing group 8

<u>IATA</u>

**14.1. UN number** UN1789

14.2. UN proper shipping name HYDROCHLORIC ACID, SOLUTION

14.3. Transport hazard class(es)814.4. Packing groupIII

14.5. Environmental hazards No hazards identified

**14.6. Special precautions for user** No special precautions required.

14.7. Maritime transport in bulk Not applicable, packaged goods

according to IMO instruments

## **SECTION 15: REGULATORY INFORMATION**

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

#### **International Inventories**

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Water	7732-18-5	231-791-2	-	-	X	X	KE-35400	Х	-
Hydrochloric acid	7647-01-0	231-595-7	-	-	X	X	KE-20189	Χ	X

	Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
	Water	7732-18-5	Х	ACTIVE	X	-	X	Х	X
Ε	Hydrochloric acid	7647-01-0	Х	ACTIVE	Х	-	X	Х	Х

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

#### Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) -	REACH (1907/2006) -	REACH Regulation (EC
		Annex XIV - Substances	Annex XVII - Restrictions	1907/2006) article 59 -

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		Subject to Authorization	on Certain Dangerous Substances	Candidate List of Substances of Very High Concern (SVHC)
Water	7732-18-5	-	-	-
Hydrochloric acid	7647-01-0	-	Use restricted. See entry	-
			75.	
			(see link for restriction	
			details)	

#### **REACH links**

https://echa.europa.eu/substances-restricted-under-reach

#### Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident	, ,
Water	7732-18-5	Notification Not applicable	Requirements  Not applicable
Hydrochloric acid	7647-01-0	25 tonne	250 tonne

Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? Not applicable

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

Take note of Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values

## **National Regulations**

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

**WGK Classification** Water endangering class = 1 (self classification)

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Hydrochloric acid	WGK1	

Component	Switzerland - Ordinance on the Reduction of Risk from handling of hazardous substances preparation (SR 814.81)	Switzerland - Ordinance on Incentive Taxes on Volatile Organic Compounds (OVOC)	Switzerland - Ordinance of the Rotterdam Convention on the Prior Informed Consent Procedure
Hydrochloric acid 7647-01-0 ( >1 - <10 )	Prohibited and Restricted Substances		

#### 15.2. Chemical safety assessment

Chemical Safety Assessment/Reports (CSA/CSR) are not required for mixtures

SECTION 16: OTHER INFORMATION	
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#### 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

H318 - Causes serious eye damage H335 - May cause respiratory irritation

#### Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b)

Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances IECSC - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances AICS - Australian Inventory of Chemical Substances NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50% POW - Partition coefficient Octanol:Water vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of

Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime

Dangerous Goods Code

Transport Association MARPOL - International Convention for the Prevention of Pollution from

ICAO/IATA - International Civil Aviation Organization/International Air

OECD - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

ATE - Acute Toxicity Estimate VOC - (Volatile Organic Compound)

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

## Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Ships

Physical hazards On basis of test data

**Health Hazards** Bridging principle "Dilution" Calculation method **Environmental hazards** Bridging principle "Dilution" Calculation method

**Training Advice** 

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Prepared By Health, Safety and Environmental Department

**Creation Date** 02-Mar-2009 **Revision Date** 17-Jul-2024

**Revision Summary** New emergency telephone response service provider.

## This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

#### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other

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materials or in any process, unless specified in the text

## **End of Safety Data Sheet**