

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

Creation Date 27-Feb-2012

Revision Date 25-Sep-2023

Revision Number 8

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

1.1. Product identifier	
Product Description: Cat No. : Synonyms Molecular Formula	<u>Methanesulfonic acid, 70% solution in water</u> 125620000; 125620010; 125622500 MSA C H4 O3 S
Unique Formula Identifier (UFI)	K2KW-T2KQ-7X0T-E9KY
1.2. Relevant identified uses of the	substance or mixture and uses advised against
Recommended Use Uses advised against	Laboratory chemicals. No Information available
1.3. Details of the supplier of the sa	fety data sheet
Company	
	UK entity/business name Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom EU entity/business name Thermo Fisher Scientific
	Janssen Pharmaceuticalaan 3a, 2440 Geel, Belgium
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

Physical hazards

Methanesulfonic acid, 70% solution in water

Substances/mixtures corrosive to metal

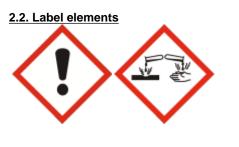
Health hazards

Acute oral toxicity Acute dermal toxicity Skin Corrosion/Irritation Serious Eye Damage/Eye Irritation Specific target organ toxicity - (single exposure)

Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16



Signal Word

Danger

Hazard Statements

H290 - May be corrosive to metals

H314 - Causes severe skin burns and eye damage

H335 - May cause respiratory irritation

H302 + H312 - Harmful if swallowed or in contact with skin

Precautionary Statements

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

P310 - Immediately call a POISON CENTER or doctor/physician

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

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

2.3. Other hazards

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

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Category 1 (H290)

Category 4 (H302) Category 4 (H312) Category 1 B (H314) Category 1 (H318) Category 3 (H335)

Methanesulfonic acid, 70% solution in water

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Methanesulfonic acid	75-75-2	EEC No. 200-898-6	70	Met. Corr. 1 (H290) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1B (H314) Eye Dam. 1 (H318) STOT SE 3 (H335)
Water	7732-18-5	231-791-2	30	-

Components	Reach Registration Number	
Methanesulfonic acid	01-2119491166-34	

Full text of Hazard Statements: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General Advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Eye Contact	Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Clean mouth with water. Call a physician immediately.
Inhalation	If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or 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. Remove from exposure, lie down. Call a physician immediately.
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
	Causes burns by all exposure routes Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

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

CO₂, dry chemical, dry sand, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

Methanesulfonic acid, 70% solution in water

Water may be ineffective.

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Sulfur oxides, Thermal decomposition can lead to release of irritating gases and vapors.

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. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment as required. Ensure adequate ventilation.

6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

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

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

Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not ingest. If swallowed then seek immediate medical assistance.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store in metal containers.

Technical Rules for Hazardous Substances (TRGS) 510 Class 8A Storage Class (LGK) (Germany)

7.3. Specific end use(s)

Methanesulfonic acid, 70% solution in water

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

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

Biological limit values

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 local	Acute effects	Chronic effects local	Chronic effects
	(Dermal)	systemic (Dermal)	(Dermal)	systemic (Dermal)
Methanesulfonic acid 75-75-2(70)				DNEL = 19.44mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
Methanesulfonic acid 75-75-2 (70)			DNEL = 2.9 mg/m ³	DNEL = 6.76mg/m ³

Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water			Microorganisms in	Soil (Agriculture)
		sediment		sewage treatment	
Methanesulfonic acid	PNEC = 0.012mg/L	PNEC =	PNEC = 0.12mg/L	PNEC = 100mg/L	PNEC =
75-75-2 (70)		0.0444mg/kg		_	0.00183mg/kg soil
		sediment dw			dw

Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
Methanesulfonic acid 75-75-2 (70)	PNEC = 0.0012mg/L	PNEC = 0.00444mg/kg sediment dw			

8.2. Exposure controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash 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 Eye Protection	Goggles (European standard - EN 166)
Hand Protection	Protective gloves

Methanesulfonic acid, 70% solution in water

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber	See manufacturers	-	EN 374	(minimum requirement)
Butyl rubber	recommendations			· · · ·
Nitrile rubber				
Neoprene				
PVC				
Skin and body pro	tection Long sle	eved clothing.		
(Refer to manufacturer/s Ensure gloves are suita sensitisation effects, als of cuts, abrasion.	ructions regarding perm supplier for information) ble for the task: Chemic	al compatability, Dex n the specific local co	terity, Operational con	rovided by the supplier of the gloves. ditions, User susceptibility, e.g. he product is used, such as the danger
Respiratory Protec	appropri To prote	ate certified respirate	ors.	exposure limit they must use nent must be the correct fit and be used
Large scale/emergenc	are exce Recom	eded or if irritation o	r other symptoms are of Particulates filter conf	6 approved respirator if exposure limits experienced forming to EN 143 or Acid gases filter
Small scale/Laborator	limits are Recom r 141	e exceeded or if irrita nended half mask:-	tion or other symptom	5; or; Half mask: EN140; plus filter, EN
Environmental exposu	ire controls Prevent	product from enterin	g drains.	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Liquid	
Appearance Odor Odor Threshold Melting Point/Range Softening Point Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	Colorless No information available No data available -54 °C / -65.2 °F No data available No information available No data available Not applicable No data available	Liquid
Flash Point Autoignition Temperature Decomposition Temperature pH Viscosity Water Solubility Solubility in other solvents Partition Coefficient (n-octanol/wat Component	 > 110 °C / > 230 °F No data available No data available 1 No data available Miscible No information available er) log Pow 	Method - No information available

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Methanesulfonic acid	-2.4	
Vapor Pressure	<1 mbar @ 20 °C	
Density / Specific Gravity	1.350	
Bulk Density	Not applicable	Liquid
Vapor Density	No information available	(Air = 1.0)
Particle characteristics	Not applicable (liquid)	
9.2. Other information		
Molecular Formula	C H4 O3 S	
Molecular Weight	96.1	

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 react	ions
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. None under normal processing.
10.4. Conditions to avoid	Excess heat. Incompatible products.
10.5. Incompatible materials	Bases. Strong acids. Amines. Alkaline. Strong reducing agents. Lead. Hydrogen fluoride. Metals. copper.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO₂). Sulfur oxides. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 11: TOXICOLOGICAI	L INFORMATION
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11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

 (a) acute toxicity;

 Oral
 Category 4

 Dermal
 Category 4

 Inhalation
 Based on available data, the classification criteria are not met

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methanesulfonic acid	649 mg/kg(Rat)	1000 - 2000 mg/kg (Rabbit)	1.3 mg/L/6h (Rat)
Water	-	-	-

(b) skin corrosion/irritation; Category 1 B

Methanesulfonic acid	70% solution in water	
methanesultonic aciu	10/0 Solution in water	

(c) serious eye damage/irritation;	Category 1
(d) respiratory or skin sensitization Respiratory Skin	No data available No data available
(e) germ cell mutagenicity;	No data available
	Not mutagenic in AMES Test
(f) carcinogenicity;	No data available
	There are no known carcinogenic chemicals in this product
(g) reproductive toxicity;	No data available
(h) STOT-single exposure;	Category 3
Results / Target organs	Respiratory system.
(i) STOT-repeated exposure;	No data available
Target Organs	No information available.
(j) aspiration hazard;	No data available
Symptoms / effects,both acute and delayed	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.
11.2. Information on other hazards	

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 flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Do not empty into drains. Contains a substance which is:. Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
Methanesulfonic acid	Oncorhynchus mykiss: LC50=73 mg/L 96h	EC50: = 12 mg/L, 48h (Daphnia pulex)	

 12.2. Persistence and degradability
 Readily biodegradable

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

 Degradation in sewage
 Contains substances known to be hazardous to the environment or not degradable in waster water treatment plants.

12.3. Bioaccumulative potential Bioac

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Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Methanesulfonic acid	-2.4	No data available
12.4. Mobility in soil	The product is water soluble, and may spread environment due to its water solubility. Highly	
<u>12.5. Results of PBT and vPvB</u> assessment	No data available for assessment.	
<u>12.6. Endocrine disrupting</u> properties Endocrine Disruptor Information	This product does not contain any known or s	suspected endocrine disruptors
<u>12.7. Other adverse effects</u> Persistent Organic Pollutant Ozone Depletion Potential	This product does not contain any known or s This product does not contain any known or s	•
SE	ECTION 13: DISPOSAL CONSIDER	RATIONS
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.
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

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14.1. UN number	UN3265
14.2. UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s.
Technical Shipping Name	Methanesulfonic acid
14.3. Transport hazard class(es)	8
14.4. Packing group	II

<u>ADR</u>

<u>14.1. UN number</u>	UN3265
14.2. UN proper shipping name	Corrosive liquid, acidic, organic, n.o.s.
Technical Shipping Name	Methanesulfonic acid
14.3. Transport hazard class(es)	8
14.4. Packing group	II

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<u>IATA</u>

<u>14.1. UN number</u> <u>14.2. UN proper shipping name</u> Technical Shipping Name <u>14.3. Transport hazard class(es)</u> <u>14.4. Packing group</u>	UN3265 Corrosive liquid, acidic, organic, n.o.s. Methanesulfonic acid 8 II
14.5. Environmental hazards	No hazards identified
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories

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

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Methanesulfonic acid	75-75-2	200-898-6	-	-	Х	Х	KE-23186	Х	Х
Water	7732-18-5	231-791-2	-	-	Х	Х	KE-35400	Х	-

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Methanesulfonic acid	75-75-2	Х	ACTIVE	Х	-	Х	X	Х
Water	7732-18-5	Х	ACTIVE	Х	-	Х	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) - Annex XIV - Substances Subject to Authorization	5	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Methanesulfonic acid	75-75-2	-	Use restricted. See item 75. (see link for restriction details)	-
Water	7732-18-5	-	-	-

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 Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Methanesulfonic acid	75-75-2	Not applicable	Not applicable
Water	7732-18-5	Not applicable	Not applicable

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 .

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
Methanesulfonic 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	
Methanesulfonic acid 75-75-2 (70)	Prohibited and Restricted Substances			

15.2. Chemical safety assessment

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

SECTION 16: OTHER INFORMATION

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

H290 - May be corrosive to metals

H302 - Harmful if swallowed

H312 - Harmful in contact with skin

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) Inventory
EINECS/ELINCS - European Inventory of Existing Commercial Chemical	
Substances/EU List of Notified Chemical Substances	Substances List
PICCS - Philippines Inventory of Chemicals and Chemical Substances	ENCS - Japanese Existing and New Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances	AICS - Australian Inventory of Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances	NZIOC - New Zealand Inventory of Chemicals

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WEL - Workplace Exposure Limit		TWA - Time Weighted Average
ACGIH - American Conference of Go	overnmental Industrial Hygienists	IARC - International Agency for Research on Cancer
DNEL - Derived No Effect Level		Predicted No Effect Concentration (PNEC)
RPE - Respiratory Protective Equipm	ient	LD50 - Lethal Dose 50%
LC50 - Lethal Concentration 50%		EC50 - Effective Concentration 50%
NOEC - No Observed Effect Concent		POW - Partition coefficient Octanol:Water
PBT - Persistent, Bioaccumulative, T	oxic	vPvB - very Persistent, very Bioaccumulative
ADR - European Agreement Concerr Dangerous Goods by Road	ning the International Carriage of	ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
IMO/IMDG - International Maritime O	rganization/International Maritime	MARPOL - International Convention for the Prevention of Pollution from
Dangerous Goods Code		Ships
OECD - Organisation for Economic Co-operation and Development		ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor		VOC - (Volatile Organic Compound)
Key literature references and s	ources for data	
https://echa.europa.eu/informatic		
Suppliers safety data sheet, Che		RTECS
Classification and procedure u	used to derive the classification	on for mixtures according to Population (EC) 1272/2009 ICI Bi
•	On basis of test data	on for mixtures according to Regulation (EC) 1272/2008 [CLP]:
Physical hazards		
Health Hazards	Calculation method	
Environmental hazards	Calculation method	

Environmental hazards

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.

Creation Date	27-Feb-2012
Revision Date	25-Sep-2023
Revision Summary	Not applicable.

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 materials or in any process, unless specified in the text

End of Safety Data Sheet