

Creation Date 23-Jan-2009

Revision Date 18-Dec-2020

Revision Number 13

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

**1.1. Product identifier**

**Product Description:** 3-Chloroperoxybenzoic acid, 70-75%  
**Cat No. :** 255790000; 255790010; 255790250; 255791000; 255795000  
**Synonyms** m-Chloroperbenzoic acid; m-CPBA; MCPBA  
**Molecular Formula** C7 H5 Cl O3  
**REACH registration number** 01-2120794224-51-0000

**Unique Formula Identifier (UFI)** WX18-1UTS-6W04-7P7V

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

**Recommended Use** Laboratory/Industrial use chemical/reagent. Chemical intermediate. See Annex for full list.  
**Sector of use** SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites  
 SU9 - Manufacture of fine chemicals  
 SU24 - Scientific research and development  
**Product category** PC21 - Laboratory chemicals  
**Process categories** PROC1 - Use in closed process, no likelihood of exposure  
 PROC9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing)  
 PROC15 - Use as a laboratory reagent  
**Environmental release category** ERC6b - Industrial use of reactive processing aids  
 ERC8b - Wide dispersive indoor use of reactive substances in open systems  
 ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)  
**Uses advised against** Food, drug, pesticide or biocidal product use

**1.3. Details of the supplier of the safety data sheet**

**Company** **UK entity/business name**  
 Fisher Scientific UK  
 Bishop Meadow Road,  
 Loughborough, Leicestershire LE11 5RG, United Kingdom  
 General info; Tel: +44 (0)1509 231166

**EU entity/business name**  
 Acros Organics BVBA  
 Janssen Pharmaceuticaan 3a, 2440 Geel, Belgium  
 General Info; Tel: +32-14-57 52 11 (info@acros.com)  
 Technical Support; Tel +32-14-56 56 00 (acros.techsupport@thermofisher.com)

**E-mail address** begel.sdsdesk@thermofisher.com

**1.4. Emergency telephone number**

For information **US** call: 001-800-ACROS-01 / **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)

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

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

#### CLP Classification - Regulation (EC) No 1272/2008

##### Physical hazards

Organic peroxides

Type D (H242)

##### Health hazards

Acute oral toxicity  
Skin Corrosion/Irritation  
Serious Eye Damage/Eye Irritation  
Skin Sensitization

Category 4 (H302)  
Category 1 C (H314)  
Category 1 (H318)  
Category 1 (H317)

##### Environmental hazards

Acute aquatic toxicity  
Chronic aquatic toxicity

Category 1 (H400)  
Category 1 (H410)

Full text of Hazard Statements: see section 16

### 2.2. Label elements



Signal Word

Danger

#### Hazard Statements

H242 - Heating may cause a fire  
H302 - Harmful if swallowed  
H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H410 - Very toxic to aquatic life with long lasting effects

#### Precautionary Statements

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P220 - Keep away from clothing and other combustible materials  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
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 or shower  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and

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easy to do. Continue rinsing  
P310 - Immediately call a POISON CENTER or doctor/physician

## 2.3. Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB)

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - Regulation (EC) No 1272/2008
3-Chloroperoxybenzoic acid	937-14-4	EEC No. 213-322-3	70-76	Org. Perox D (H242) Acute Tox. 4 (H302) Skin Corr. 1C (H314) Skin Sens. 1 (H317) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Benzoic acid, 3-chloro-	535-80-8	EEC No. 208-618-4	<20	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) STOT SE 3 (H335)
Water	7732-18-5	231-791-2	>17	-

Component	Specific concentration limits (SCL's)	M-Factor	Component notes
3-Chloroperoxybenzoic acid	-	1	-

<b>REACH registration number</b>	01-2120794224-51-0000
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Full text of Hazard Statements: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

<b>General Advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.
<b>Ingestion</b>	Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison control center immediately. 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.
<b>Self-Protection of the First Aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to

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protect themselves and prevent spread of contamination.

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

Causes burns by all exposure routes. May cause allergic skin reaction. 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: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

## 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**

CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

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

No information available.

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

The product causes burns of eyes, skin and mucous membranes. Do not allow run-off from fire-fighting to enter drains or water courses.

#### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), 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. 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

Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

### 6.2. Environmental precautions

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

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

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

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## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe dust. 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

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

**Technical Rules for Hazardous Substances (TRGS) 510** Class 5.2  
**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

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 (Dermal)	Acute effects systemic (Dermal)	Chronic effects local (Dermal)	Chronic effects systemic (Dermal)
3-Chloroperoxybenzoic acid 937-14-4 ( 70-76 )				DNEL = 0.75mg/kg bw/day

Component	Acute effects local (Inhalation)	Acute effects systemic (Inhalation)	Chronic effects local (Inhalation)	Chronic effects systemic (Inhalation)
3-Chloroperoxybenzoic acid 937-14-4 ( 70-76 )				DNEL = 2.64mg/m <sup>3</sup>

#### Predicted No Effect Concentration (PNEC)

See values below.

Component	Fresh water	Fresh water sediment	Water Intermittent	Microorganisms in sewage treatment	Soil (Agriculture)
3-Chloroperoxybenzoic acid	PNEC = 0.45µg/L	PNEC = 22.2µg/kg sediment dw	PNEC = 4.5µg/L	PNEC = 2mg/L	PNEC = 4.17µg/kg soil dw

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937-14-4 ( 70-76 )			
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Component	Marine water	Marine water sediment	Marine water intermittent	Food chain	Air
3-Chloroperoxybenzoic acid 937-14-4 ( 70-76 )	PNEC = 45ng/L	PNEC = 2.22µg/kg sediment dw	PNEC = 0.45µg/L		

## 8.2. Exposure controls

### Engineering Measures

Use only under a chemical fume hood. 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

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments (minimum requirement)
Nitrile rubber	See manufacturers recommendations	-	EN 374	
Neoprene				
Natural rubber				
PVC				

**Skin and body protection** Long sleeved clothing.

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 compatibility, 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** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. 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

**Small scale/Laboratory use** Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.  
**Recommended half mask:-** Particle filtering: EN149:2001  
When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls** Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

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<b>Physical State</b>	paste Solid	
<b>Appearance</b>	Off-white	
<b>Odor</b>	Slight	
<b>Odor Threshold</b>	No data available	
<b>Melting Point/Range</b>	92 - 94 °C / 197.6 - 201.2 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	264 °C / 507.2 °F	Estimated
<b>Flammability (liquid)</b>	Not applicable	Solid
<b>Flammability (solid,gas)</b>	No information available	
<b>Explosion Limits</b>	No data available	
<b>Flash Point</b>	Not applicable	<b>Method -</b> No information available
<b>Autoignition Temperature</b>	No data available	
<b>Decomposition Temperature</b>	> 88°C	
<b>Self-Accelerating Decomposition Temperature (SADT)</b>	55°C	
<b>pH</b>	4.5	sat.aq.sol
<b>Viscosity</b>	Not applicable	Solid
<b>Water Solubility</b>	Slightly soluble	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Component</b>	<b>log Pow</b>	
3-Chloroperoxybenzoic acid	1.03	
Benzoic acid, 3-chloro-	2.7	
<b>Vapor Pressure</b>	23 hPa @ 20 °C	
<b>Density / Specific Gravity</b>	0.56	
<b>Bulk Density</b>	No data available	
<b>Vapor Density</b>	Not applicable	Solid
<b>Particle characteristics</b>	No data available	

## 9.2. Other information

<b>Molecular Formula</b>	C7 H5 Cl O3
<b>Molecular Weight</b>	172.57
<b>Evaporation Rate</b>	Not applicable - Solid

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Yes

### 10.2. Chemical stability

Stable under normal conditions. Organic peroxide. Hazardous decomposition may occur.

### 10.3. Possibility of hazardous reactions

<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

### 10.4. Conditions to avoid

Incompatible products. Excess heat. Temperatures above 35°C - SADT = 55°C.

### 10.5. Incompatible materials

Reducing Agent. Combustible material. Strong bases.

### 10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen chloride gas.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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

#### Product Information

##### (a) acute toxicity;

Oral Category 4  
Dermal Based on available data, the classification criteria are not met  
Inhalation Based on available data, the classification criteria are not met

#### Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
3-Chloroperoxybenzoic acid	1807 mg/kg (Rat)	-	-
Water	-	-	-

##### (b) skin corrosion/irritation;

Test method Category 1 C  
OECD 404  
Test species rabbit  
Observational endpoint Causes severe irritation and or burns

##### (c) serious eye damage/irritation;

Test method Category 1  
OECD 405  
Test species rabbit  
Observation end point CAUSES (SEVERE) EYE BURNS

##### (d) respiratory or skin sensitization;

Respiratory Based on available data, the classification criteria are not met  
Skin Category 1  
No information available

##### (e) germ cell mutagenicity;

Based on available data, the classification criteria are not met

##### (f) carcinogenicity;

Based on available data, the classification criteria are not met  
There are no known carcinogenic chemicals in this product

##### (g) reproductive toxicity;

Based on available data, the classification criteria are not met

##### (h) STOT-single exposure;

Based on available data, the classification criteria are not met

##### (i) STOT-repeated exposure;

Target Organs

Based on available data, the classification criteria are not met  
None known.

##### (j) aspiration hazard;

Not applicable  
Solid

#### 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. Symptoms



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of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

## 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

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae
3-Chloroperoxybenzoic acid	LC50 (96h): 0.45 mg/l (Cyprinus carpio) OECD Guideline 203		EC50 (72h): 0.49 mg/l (Pseudokirchneriella subcapitata) OECD Guideline 201

Component	Microtox	M-Factor
3-Chloroperoxybenzoic acid		1

### 12.2. Persistence and degradability

#### Persistence

May persist, based on information available.

#### Degradation in sewage treatment plant

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

### 12.3. Bioaccumulative potential

Bioaccumulation is unlikely; May have some potential to bioaccumulate

Component	log Pow	Bioconcentration factor (BCF)
3-Chloroperoxybenzoic acid	1.03	No data available
Benzoic acid, 3-chloro-	2.7	No data available

### 12.4. Mobility in soil

Spillage unlikely to penetrate soil. Is not likely mobile in the environment due its low water solubility.

### 12.5. Results of PBT and vPvB assessment

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

### 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

This product does not contain any known or suspected substance

#### Ozone Depletion Potential

This product does not contain any known or suspected substance

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

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<b>Waste from Residues/Unused Products</b>	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.
<b>Contaminated Packaging</b>	Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.
<b>European Waste Catalogue (EWC)</b>	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
<b>Other Information</b>	Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

## SECTION 14: TRANSPORT INFORMATION

### IMDG/IMO

<b>14.1. UN number</b>	UN3106
<b>14.2. UN proper shipping name</b>	ORGANIC PEROXIDE TYPE D, SOLID (3-CHLOROPEROXYBENZOIC ACID)
<b>Technical Shipping Name</b>	3-Chloroperoxybenzoic acid
<b>14.3. Transport hazard class(es)</b>	5.2
<b>14.4. Packing group</b>	

### ADR

<b>14.1. UN number</b>	UN3106
<b>14.2. UN proper shipping name</b>	ORGANIC PEROXIDE TYPE D, SOLID (3-CHLOROPEROXYBENZOIC ACID)
<b>Technical Shipping Name</b>	3-Chloroperoxybenzoic acid
<b>14.3. Transport hazard class(es)</b>	5.2
<b>14.4. Packing group</b>	

### IATA

<b>14.1. UN number</b>	UN3106
<b>14.2. UN proper shipping name</b>	ORGANIC PEROXIDE TYPE D, SOLID (3-Chloroperoxybenzoic acid)
<b>Technical Shipping Name</b>	3-Chloroperoxybenzoic acid
<b>14.3. Transport hazard class(es)</b>	5.2
<b>14.4. Packing group</b>	

**14.5. Environmental hazards** Dangerous for the environment  
Product is a marine pollutant according to the criteria set by IMDG/IMO

**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**

X = listed, Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), China (IECSC), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

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Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	IECSC	ENCS	ISHL	AICS	KECL
3-Chloroperoxybenzoic acid	213-322-3	-		X	X	-	X	-	X	X	X	KE-05526
Benzoic acid, 3-chloro-	208-618-4	-		X	X	-	X	X	X	X	X	-
Water	231-791-2	-		X	X	-	X	X	X		X	KE-35400

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
3-Chloroperoxybenzoic acid	937-14-4	Not applicable	Not applicable
Benzoic acid, 3-chloro-	535-80-8	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

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 = non-hazardous to waters (self classification)

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
3-Chloroperoxybenzoic acid 937-14-4 ( 70-76 )	Prohibited and Restricted Substances		

**15.2. Chemical safety assessment**

A Chemical Safety Assessment/Report (CSA/CSR) has been conducted 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**

- H242 - Heating may cause a fire
- H302 - Harmful if swallowed
- H314 - Causes severe skin burns and eye damage
- H315 - Causes skin irritation
- H317 - May cause an allergic skin reaction
- H318 - Causes serious eye damage
- H319 - Causes serious eye irritation
- H335 - May cause respiratory irritation
- H400 - Very toxic to aquatic life

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H410 - Very toxic to aquatic life with long lasting effects

## Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical 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

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

**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

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

### Key literature references and sources for data

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

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

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** - (Volatile Organic Compound)

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

**Physical hazards** On basis of test data

**Health Hazards** Calculation method

**Environmental hazards** 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.

Chemical incident response training.

**Creation Date** 23-Jan-2009

**Revision Date** 18-Dec-2020

**Revision Summary** Not applicable.

**This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006. COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006 .**

### 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**

## Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

### m-Chloroperoxybenzoic acid (MCPBA) - Exposure Scenarios

CAS No 937-14-4	REACH registration number 01-2120794224-51-0000	EC No 213-322-3
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Exposure Scenarios Overview				
Title	Sector of use	Process category(ies)	Environmental release category	ES Identifier
Formulation of preparations and/or re-packaging	Use at Industrial Sites - Industrial use of the substance as an oxidant in organic synthesis	1, 2, 3, 4, 5, 8a, 8b, 9, 15	ERC6b - Industrial use of reactive processing aids	ES1-F1 MCPBA
Laboratory use	Widespread use by professional workers – Use as a laboratory reagent by professional users	1, 2, 3, 4, 5, 8a, 8b, 9, 15	ERC8b - Wide dispersive indoor use of reactive substances in open systems	ES2-L1 MCPBA

### Exposure scenario

#### ES1 Synthesis/formulating/re-packing of MCPBA - ES1-F1 MCPBA

#### Section 1 - Identification of the use

<b>Main user group</b>	Industrial uses: Uses of substances as such or in preparations at industrial sites
<b>Type</b>	Worker
<b>Processes, tasks, activities covered</b>	Manufacture or use as an intermediate or process chemical or extraction agent. Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities
<b>Sector(s) of use</b>	SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites
<b>Process category(ies)</b>	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15 - Use as laboratory reagent
<b>Environmental release category(ies)</b>	ERC6b - Industrial use of reactive processing aids

#### Section 2 - Operational Conditions and Risk Management Measures

##### Product characteristics

Physical State	Solid paste
pH	4.5
Water Solubility	7961mg/L at 25°C

<b>Vapor Pressure</b>	0.373Pa @ 25 °C
<b>Volatility</b>	Very low
Covers concentrations up to 100 %	
(Imported product is typically 98.8% of 3- Chloroperoxybenzoic acid (72%) balanced with 3-Chlorobenzoic acid (8.8%) and Water (18%))	

## Section 2.1 - Control of environmental exposure

### Environmental release category(ies)

ERC6b - Industrial use of reactive processing aids

### Control of environmental exposure

Not readily biodegradable

Annual amount used in the EU 97.9 t/a

Daily amount per site 3.916 t/d

### Environmental factors not influenced by risk management

Emission days	25
Receiving water dilution (fresh or marine)	18000 m <sup>3</sup> /d

### Other operational conditions of use affecting environmental exposure

Emission days	25
Release fraction to air from process (initial release prior to RMM)	7.3 x 10 <sup>-3</sup> %
Release fraction to wastewater from process (initial release prior to RMM)	94.61%
Release fraction to soil from process (initial release prior to RMM)	5.387%

### Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m <sup>3</sup> /d
Removal efficiency fraction (offsite; STP)	Standard effectiveness 5.394%

### Waste management

Air	ERC release factor 0.1%
Water	1.75 x 10 <sup>-6</sup> % Assumed on-site sewage treatment plant flow
Soil	0.025%

## Section 2.2 - Control of worker exposure

### General information on exposure estimation

Manufactured and processed at industrial sites in closed continuous processes with either no likelihood of exposure or with only occasional opportunity for exposure in controlled conditions e.g. during maintenance, sampling or discharge of the material.

### Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Amounts used	97.9 t/y
Exposure duration	< 8 hour(s)
Use frequency	25 days per year
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle substance within a closed system Use of closed transfers of liquids from storage to production equipment (e.g. metered piped or pumped additions) Sample via a closed loop or other system to avoid exposure
Technical conditions and measures to control dispersion from source towards	Undertake operation under enclosed conditions

the worker	
Additional good practice advice beyond the REACH Chemical Safety Report	Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact Use chemically resistant gloves conforming to EN374 Workers involved in production, handling, sampling and transfer of materials are well-trained in these procedures as well as good industrial hygiene practices -----
Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Exposure duration	< 8 hour(s)
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Technical conditions and measures to control dispersion from source towards the worker	Handle in a fume cupboard or under extract ventilation - efficiency of at least [%]: 90
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Workers involved in production, handling, sampling and transfer of materials are well-trained in these procedures as well as good industrial hygiene practices -----
Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Exposure duration	< 8 hour(s)
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle in a fume cupboard or under extract ventilation Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Workers involved in production, handling, sampling and transfer of materials are well-trained in these procedures as well as good industrial hygiene practices -----
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Exposure duration	< 8 hour(s)
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle in a fume cupboard or under extract ventilation Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Workers involved in production, handling, sampling and transfer of materials are well-trained in these procedures as well as good industrial hygiene practices -----
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles

	(multistage and/or significant contact)
Covers concentrations up to	100%
Exposure duration	Avoid carrying out operation for more than 4 hours
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<= 40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle in a fume cupboard or under extract ventilation Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Assumes a good basic standard of occupational hygiene is implemented
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Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Covers concentrations up to	100%
Exposure duration	< 4 hour(s)
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle in an enclosing hood with exhaust ventilation - efficiency of at least [%]: 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Assumes a good basic standard of occupational hygiene is implemented
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Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Exposure duration	Avoid carrying out activities involving exposure for more than 4 hours
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Assumes a good basic standard of occupational hygiene is implemented
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Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Exposure duration	< 8 hour(s)
Indoor/Outdoor use	Indoor use
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3



Organisational measures to prevent /limit releases, dispersion and exposure Fill containers/cans at dedicated fill points supplied with local extract ventilation  
Local exhaust ventilation - efficiency of at least 90%

Conditions and measures related to personal protection, hygiene and health evaluation Wear chemically resistant gloves (tested to EN374) in combination with specific activity training  
Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact

Additional good practice advice beyond the REACH Chemical Safety Report Assumes a good basic standard of occupational hygiene is implemented

Process category(ies) PROC15 - Use as laboratory reagent

Covers concentrations up to 100%

Exposure duration < 8 hour(s)

Indoor/Outdoor use Indoor

Assumes process temperature up to <=40°C

Minimum room ventilation rate for handling/application (air changes per hour) 1-3

Organisational measures to prevent /limit releases, dispersion and exposure Handle in a fume cupboard - efficiency of at least [%]: 90

Conditions and measures related to personal protection, hygiene and health evaluation Wear chemically resistant gloves (tested to EN374) in combination with specific activity training  
Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact

Additional good practice advice beyond the REACH Chemical Safety Report Assumes a good basic standard of occupational hygiene is implemented

**Control of consumer exposure** Not intended for consumer use

**Section 3 - Exposure estimation**

**Environment**

**Environmental release category(ies)**

ERC6b - Industrial use of reactive processing aids

**Predicted No Effect Concentration (PNEC)** - See values below

<b>Fresh water</b>	0.000045 mg/l	<b>Marine water</b>	0.00000045 mg/l
<b>Fresh water sediment</b>	0.000222 mg/kg dw	<b>Marine water sediment</b>	0.0000222 mg/kg dw
<b>Water Intermittent</b>	0.00045 mg/l	<b>Soil (Agriculture)</b>	0.000417 mg/kg dw
<b>Microorganisms in sewage treatment</b>	2 mg/l		

<b>Environment</b>	<b>Predicted exposure level</b>	<b>Risk characterization ratio (RCR)</b>
<b>Freshwater</b>	3.86 x 10 <sup>-5</sup> mg/l	0.086
<b>Marine water</b>	3.85 x 10 <sup>-6</sup> mg/l	0.086
<b>Freshwater sediment</b>	1.91 x 10 <sup>-3</sup> mg/kg dw	0.086
<b>Marine sediment</b>	1.9 x 10 <sup>-4</sup> mg/kg dw	0.086
<b>Municipal STP</b>	3.24 x 10 <sup>-4</sup> mg/l	<0.01
<b>Soil</b>	3.14 x 10 <sup>-4</sup> mg/kg dw	0.075
<b>Air</b>	7.46 x 10 <sup>-5</sup> mg/m <sup>3</sup>	<0.01

**Calculation method** - EUSES 2.1

**Remarks**

No significant PEC values are indicated for the regional scale even under the conservative assumptions of the Tier 2 EUSES assessment. All derived PECs are below the relevant PNEC and so no further assessment or refinements are required.

**Health**

**Derived No Effect Level (DNEL)** - See table for values

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral Dermal Inhalation				0.75 mg/kg bw/day 2.64 mg/m <sup>3</sup>

**Exposure estimation  
Workers**

Process category(ies)	Exposure route	Predicted exposure level	Risk characterization ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - local and systemic	0.01 mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	0.04 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.034 mg/kg bw/day	0.045
	Worker - dermal, long-term - local	9.92 x 10 <sup>-3</sup> mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	9.92 x 10 <sup>-3</sup> mg/cm <sup>2</sup>	
	Worker - combined, long-term - systemic		0.049
	PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - local and systemic	1 x 10 <sup>-3</sup> mg/m <sup>3</sup>
Worker - inhalative, short-term - local and systemic		4 x 10 <sup>-3</sup> mg/m <sup>3</sup>	
Worker - dermal, long-term - systemic		0.137 mg/kg bw/day	0.183
Worker - dermal, long-term - local		0.02 mg/cm <sup>2</sup>	
Worker - dermal, short-term - local		0.02 mg/cm <sup>2</sup>	
Worker - combined, long-term - systemic			0.183
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - local and systemic	0.01 mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	0.04 mg/m <sup>3</sup>	
	Worker - dermal, short-term - systemic	0.069 mg/kg bw/day	0.092
	Worker - dermal, long-term - local	0.02 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.02 mg/cm <sup>2</sup>	
	Worker - combined, long-term - systemic		0.096
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - local and systemic	0.05 mg/m <sup>3</sup>	0.019
	Worker - inhalative, short-term - local and systemic	0.2 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.343 mg/kg bw/day	0.457
	Worker - dermal, long-term - local	0.05 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.05 mg/cm <sup>2</sup>	
	Worker - combined, long-term - systemic		0.476
	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)	Worker - inhalative, long-term - local and systemic	0.03 mg/m <sup>3</sup>
Worker - inhalative, short-term - local and systemic		0.2 mg/m <sup>3</sup>	
Worker - dermal, long-term - systemic		0.411 mg/kg bw/day	0.548
Worker - dermal, long-term - local		0.06 mg/cm <sup>2</sup>	
Worker - dermal, short-term - local		0.06 mg/cm <sup>2</sup>	
Worker - combined, long-term - systemic			0.56
PROC8a - Transfer of substance or	Worker - inhalative, long-term -	0.03 mg/m <sup>3</sup>	0.011

preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	local and systemic		
	Worker - inhalative, short-term - local and systemic	0.2 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.411 mg/kg bw/day	0.548
	Worker - dermal, long-term - local	0.03 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.03 mg/cm <sup>2</sup>	
	Worker - combined, long-term - systemic		0.56
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - local and systemic	3 x 10 <sup>-3</sup> mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	0.02 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.411 mg/kg bw/day	0.548
	Worker - dermal, long-term - local	0.03 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.03 mg/cm <sup>2</sup>	
	Worker - combined, long-term - systemic		0.549
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, short-term - local and systemic	0.01 mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	0.04 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.343 mg/kg bw/day	0.457
	Worker - dermal, long-term - local	0.05 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.05 mg/cm <sup>2</sup>	
	Worker - combined, long-term - systemic		0.461
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - local and systemic	0.01 mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	0.04 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.068 mg/kg bw/day	0.091
	Worker - dermal, long-term - local	0.02 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.02 mg/cm <sup>2</sup>	
	Worker - combined, long-term - systemic		0.094

**Calculation method** - The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

**Exposure route**

The hazard assessment is mainly based on the corrosive and sensitising properties of the substance and exposure should be well controlled

**Remarks**

Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented

**Section 4 - Guidance to check compliance with the exposure scenario**

Used EUSES model

Used ECETOC TRA model

Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>)

Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented

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ECHA guidance for downstream users

## Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

### m-Chloroperoxybenzoic acid (MCPBA) - Exposure Scenarios

CAS No 937-14-4	REACH registration number 01-2120794224-51-0000	EC No 213-322-3
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#### Exposure scenario

#### ES2 Laboratory Use of MCPBA - ES2-L1 MCPBA

#### Section 1 - Identification of the use

<b>Main user group</b>	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
<b>Type</b>	Worker
<b>Processes, tasks, activities covered</b>	Laboratory reagent and solvent involving transfer from larger to small containers and vice versa.
<b>Sector(s) of use</b>	SU24 - Scientific research and development SU20 - Health services SU0 - Other
<b>Process category(ies)</b>	PROC1 - Use in closed process, no likelihood of exposure PROC2 - Use in closed, continuous process with occasional controlled exposure PROC3 - Use in closed batch process (synthesis or formulation) PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15 - Use as laboratory reagent
<b>Environmental release category(ies)</b>	ERC8b - Wide dispersive indoor use of reactive substances in open systems

#### Section 2 - Operational Conditions and Risk Management Measures

##### Product characteristics

<b>Physical State</b>	Solid paste
<b>pH</b>	4.5
<b>Water Solubility</b>	7961 mg/L at 25°C
<b>Vapor Pressure</b>	0.373 Pa @ 25 °C
<b>Volatility</b>	Very low

Covers concentrations up to 100 %

(Imported product is typically 98.8% of 3-Chloroperoxybenzoic acid (72%) balanced with 3-Chlorobenzoic acid (8.8%) and Water (18%))

#### Section 2.1 - Control of environmental exposure

**Environmental release category(ies)**

ERC8b - Wide dispersive indoor use of reactive substances in open systems

**Control of environmental exposure**

Not readily biodegradable  
 Annual amount used in the EU 97.9 t/a  
 Daily amount per site 5.38 x 10<sup>-5</sup> t/d

**Other operational conditions of use affecting environmental exposure**

Release fraction to air from process (initial release prior to RMM) 0.1%  
 Release fraction to wastewater from process (initial release prior to RMM) 2%  
 Release fraction to soil from process (initial release prior to RMM) 0%

**Conditions and measures related to municipal sewage treatment plant**

Assumed domestic sewage treatment plant flow 2000 m<sup>3</sup>/d  
 Removal efficiency fraction (offsite; STP) Standard effectiveness 5.394%

**Section 2.2 - Control of worker exposure**

**General information on exposure estimation**

Local exhaust ventilation (LEV) usually required for indoor industrial use.

**Control of worker exposure**

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Covers concentrations up to	100%
Exposure duration	< 8 hour(s)
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle substance within a closed system Sample via a closed loop or other system to avoid exposure
Technical conditions and measures to control dispersion from source towards the worker	Undertake operation under enclosed conditions
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Workers involved in production, handling, sampling and transfer of materials are well-trained in these procedures as well as good industrial hygiene practices

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Covers concentrations up to	100%
Exposure duration	< 8 hour(s)
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Technical conditions and measures to control dispersion from source towards the worker	Handle in a fume cupboard or under extract ventilation - efficiency of at least [%]: 80
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there

Additional good practice advice beyond the REACH Chemical Safety Report	is potential for direct contact Workers involved in production, handling, sampling and transfer of materials are well-trained in these procedures as well as good industrial hygiene practices -----
Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Covers concentrations up to	100%
Exposure duration	< 8 hour(s)
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle in a fume cupboard or under extract ventilation Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Workers involved in production, handling, sampling and transfer of materials are well-trained in these procedures as well as good industrial hygiene practices -----
Process category(ies)	PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises
Covers concentrations up to	100%
Exposure duration	< 4 hour(s)
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle in a fume cupboard or under extract ventilation Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Workers involved in production, handling, sampling and transfer of materials are well-trained in these procedures as well as good industrial hygiene practices -----
Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
Covers concentrations up to	100%
Exposure duration	Avoid carrying out operation for more than 1 hour
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<= 40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle in a fume cupboard or under extract ventilation Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Assumes a good basic standard of occupational hygiene is implemented -----
Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities

Covers concentrations up to	100%
Exposure duration	< 1 hour(s)
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle in an enclosing hood with exhaust ventilation - efficiency of at least [%]: 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Assumes a good basic standard of occupational hygiene is implemented -----
Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Covers concentrations up to	100%
Exposure duration	Avoid carrying out operation for more than 1 hour
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Handle in an enclosing hood with exhaust ventilation - efficiency of at least [%]: 80
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Assumes a good basic standard of occupational hygiene is implemented -----
Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Covers concentrations up to	100%
Exposure duration	< 4 hour(s)
Indoor/Outdoor use	Indoor use
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per hour)	1-3
Organisational measures to prevent /limit releases, dispersion and exposure	Fill containers/cans at dedicated fill points supplied with local extract ventilation Local exhaust ventilation - efficiency of at least 80%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact
Additional good practice advice beyond the REACH Chemical Safety Report	Assumes a good basic standard of occupational hygiene is implemented -----
Process category(ies)	PROC15 - Use as laboratory reagent
Covers concentrations up to	100%
Exposure duration	< 8 hour(s)
Indoor/Outdoor use	Indoor
Assumes process temperature up to	<=40°C
Minimum room ventilation rate for handling/application (air changes per	1-3



hour)  
 Organisational measures to prevent /limit releases, dispersion and exposure Handle in a fume cupboard - efficiency of at least [%]: 90  
 Conditions and measures related to personal protection, hygiene and health evaluation Wear chemically resistant gloves (tested to EN374) in combination with specific activity training  
 Use chemically resistant face shield, goggles or safety glasses with side shields when there is potential for direct contact  
 Additional good practice advice beyond the REACH Chemical Safety Report Assumes a good basic standard of occupational hygiene is implemented  
 -----

**Control of consumer exposure** Not intended for consumer use

**Section 3 - Exposure estimation**

**Environment**

**Environmental release category(ies)**

ERC8b - Wide dispersive indoor use of reactive substances in open systems

**Predicted No Effect Concentration (PNEC)** - See values below

<b>Fresh water</b>	0.000045 mg/l	<b>Marine water</b>	0.00000045 mg/l
<b>Fresh water sediment</b>	0.000222 mg/kg dw	<b>Marine water sediment</b>	0.0000222 mg/kg dw
<b>Water Intermittent</b>	0.00045 mg/l	<b>Soil (Agriculture)</b>	0.000417 mg/kg dw
<b>Microorganisms in sewage treatment</b>	2 mg/l		

<u>Environment</u>	<u>Predicted exposure level</u>	<u>Risk characterization ratio (RCR)</u>
Freshwater	5.72 x 10 <sup>-5</sup> mg/l	0.127
Marine water	5.71 x 10 <sup>-6</sup> mg/l	0.127
Freshwater sediment	2.82 x 10 <sup>-3</sup> mg/kg dw	0.127
Marine sediment	2.81 x 10 <sup>-4</sup> mg/kg dw	0.127
Municipal STP	5.09 x 10 <sup>-4</sup> mg/l	<0.01
Soil	2.08 x 10 <sup>-4</sup> mg/kg dw	0.05
<b>Calculation method</b> - EUSES 2.1		

**Remarks**

No significant PEC values are indicated for the regional scale even under the conservative assumptions of the Tier 2 EUSES assessment. All derived PECs are below the relevant PNEC and so no further assessment or refinements are required.

**Health**

**Derived No Effect Level (DNEL)** - See table for values

<u>Route of exposure</u>	<u>Acute effects (local)</u>	<u>Acute effects (systemic)</u>	<u>Chronic effects (local)</u>	<u>Chronic effects (systemic)</u>
Oral				
Dermal				0.75 mg/kg bw/day
Inhalation				2.64 mg/m <sup>3</sup>

**Exposure estimation  
Workers**

<u>Process category(ies)</u>	<u>Exposure route</u>	<u>Predicted exposure level</u>	<u>Risk characterization ratio (RCR)</u>
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - local and systemic	0.01 mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	0.04 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.034 mg/kg bw/day	0.045
	Worker - dermal, long-term - local	9.92 x 10 <sup>-3</sup> mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	9.92 x 10 <sup>-3</sup> mg/cm <sup>2</sup>	

	Worker - combined, long-term - systemic		0.049
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - local and systemic	2 x 10 <sup>-3</sup> mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	8 x 10 <sup>-3</sup> mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.274 mg/kg bw/day	0.183
	Worker - dermal, long-term - local	0.04 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.04 mg/cm <sup>2</sup>	0.366
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - local and systemic	0.02 mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	0.08 mg/m <sup>3</sup>	
	Worker - dermal, short-term - systemic	0.138 mg/kg bw/day	0.184
	Worker - dermal, long-term - local	0.04 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.04 mg/cm <sup>2</sup>	0.192
	Worker - combined, long-term - systemic		
PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises	Worker - inhalative, long-term - local and systemic	0.12 mg/m <sup>3</sup>	0.045
	Worker - inhalative, short-term - local and systemic	0.8 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.412 mg/kg bw/day	0.549
	Worker - dermal, long-term - local	0.06 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.06 mg/cm <sup>2</sup>	0.594
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)	Worker - inhalative, long-term - local and systemic	0.04 mg/m <sup>3</sup>	0.015
	Worker - inhalative, short-term - local and systemic	0.8 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.274 mg/kg bw/day	0.366
	Worker - dermal, long-term - local	0.04 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.04 mg/cm <sup>2</sup>	0.381
	Worker - combined, long-term - systemic		
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - local and systemic	0.02 mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	0.4 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.274 mg/kg bw/day	0.366
	Worker - dermal, long-term - local	0.02 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.02 mg/cm <sup>2</sup>	0.373
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - local and systemic	0.02 mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	0.4 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.274 mg/kg bw/day	0.366

	Worker - dermal, long-term - local	0.02 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.02 mg/cm <sup>2</sup>	
	Worker - combined, long-term - systemic		0.373
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, short-term - local and systemic	0.06 mg/m <sup>3</sup>	0.023
	Worker - inhalative, short-term - local and systemic	0.4 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.412 mg/kg bw/day	0.549
	Worker - dermal, long-term - local	0.06 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.06 mg/cm <sup>2</sup>	
	Worker - combined, long-term - systemic		0.572
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - local and systemic	0.02 mg/m <sup>3</sup>	<0.01
	Worker - inhalative, short-term - local and systemic	0.08 mg/m <sup>3</sup>	
	Worker - dermal, long-term - systemic	0.068 mg/kg bw/day	0.091
	Worker - dermal, long-term - local	0.02 mg/cm <sup>2</sup>	
	Worker - dermal, short-term - local	0.02 mg/cm <sup>2</sup>	
	Worker - combined, long-term - systemic		0.098

**Calculation method** - The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated

#### Exposure route

The hazard assessment is mainly based on the corrosive and sensitising properties of the substance and exposure should be well controlled

#### Remarks

Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented

## Section 4 - Guidance to check compliance with the exposure scenario

Used EUSES model

Used ECETOC TRA model

Further details on scaling and control technologies are provided in SpERC factsheet (<http://cefic.org/en/reach-for-industries-libraries.html>)

Predicted exposures are not expected to exceed the applicable exposure limits (given in section 8 of the SDS) when the operational conditions/risk management measures given in section 2 are implemented

ECHA guidance for downstream users