

## MYCOPROSAFE®

### Material Safety Data Sheet (according to 2001/58/EC and OSHA)

#### 1. IDENTIFICATION OF THE SUBSTANCE : PREPARATION AND COMPANY

<u>Product name</u>	MYCOPROSAFE®
<u>Catalogue nr.</u>	MPS120 - MPS130 - MPS140
<u>Emission date of the MSDS :</u>	8 March 2006.
<u>Identification of the individual components :</u>	
N-Acetyl-L-cysteine :	25 x 40 mg N-Acetyl-L-cysteine, 100%
Sodium hydroxyde and tri-sodium citrate :	25 x 10 ml sodium hydroxide (2%-MPS120 3%-MPS130 or 4%-MPS140) and tri-sodium citrate.3H <sub>2</sub> O (1.47%)
Sterile Phosphate buffer :	25 x 50 ml Phosphate buffer 0.676M (Na <sub>2</sub> HPO <sub>4</sub> + KH <sub>2</sub> PO <sub>4</sub> )
Sodium Hypochlorite :	3 x 125 ml sodium hypochlorite (2.5%)
<u>Company</u>	Salubris, Inc Baldwin Park I 12 Alfred Street, suite 300 Woburn, MA 01801 USA Tel. USA: (800) 326-1484 Tel. Europe: + 33 1 47 41 28 88 Worldwide fax: +1 617 249 08 03
<u>In emergencies</u>	Call your local emergency centre

#### 2. COMPONENTS AND HAZARDOUS INGREDIENTS

COMPONENT NAME	DANGEROUS INGREDIENT	CLASSIFICATION SUBSTANCE	EC NR.	CAS NR.
Sodium hydroxide and tri-sodium citrate .3H <sub>2</sub> O	Sodium hydroxide 2%, 3% or 4%	C, R35	215-185-5	1310-73-2
Sodium hypochlorite	Sodium Hypochlorite 2.5%	C, R34, R31 N, R50	231-668-3	7681-52-9
N-acetyl-L-cysteine 100%	/	/	210-498-3	616-91-1

#### 3. HAZARDS IDENTIFICATION

A. Europe (according to Directive 1999/45/EG).

**Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O**  
Causes burns.

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B. US (according to OSHA).

#### **Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O**

Danger! Corrosive.

NFPA rating :           Health - 2  
                              Fire - 0  
                              Reactivity - 1

#### **Sodium hypochlorite**

Warning ! Harmfull if swallowed or inhaled.

Causes irritation to eyes and respiratory tract.

Causes substantial but temporary eye injury.

NFPA rating :           Health - 2  
                              Fire - 0  
                              Reactivity - 1

#### **N-Acetyl-L-cysteine**

Caution ! May cause irritation to skin and eyes.

NFPA rating :           Health - 1  
                              Fire - 0  
                              Reactivity - 0

### 4. FIRST AID MEASURES

#### **Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O**

##### **Sodium hypochlorite**

*After inhalation:*                           Remove to fresh air. Consult a physician.

*After skin contact:*                       Immediately wash thoroughly with soap and water. Immediately remove contaminated clothing.

*After eye contact:*                       Immediately flush eyes with plenty of water for at least 10 minutes, keeping eyelid open. Consult an ophthalmologist.

*After swallowing:*                       make victim drink plenty of water (if necessary several liters), avoid vomiting (risk of perforation). Immediately call in physician. Do not attempt to neutralize

##### **N-Acetyl-L-cysteine**

*Inhalation:*                               If inhaled, remove to fresh air. If not breathing, give artificial respiration and immediately get medical attention.

*Ingestion:*                               Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek medical advice.

*Skin Contact:*                           Immediately wash thoroughly with soap and water. If irritation persists, consult a physician.

*Eye Contact:*                           Immediately flush eyes with plenty of water for at least 15 minutes, keeping eyelid open. If irritation persists, consult a physician.

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#### 5. FIRE FIGHTING MEASURES

Nonflammable products

##### **Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O**

##### **Sodium hypochlorite**

*Suitable extinguishing media:*

- All non combustible extinguishing media allowed.

*Unsuitable extinguishing media:*

- No data available

*Special exposure hazards:*

- No generation of hazardous or toxic gases in dangerous quantities.

*Instructions:*

- Due to small quantities : no special instructions apply

*Special protective equipment for firefighters:*

- Due to small quantities : no special instructions apply

##### **N-Acetyl-L-cysteine**

*Suitable extinguishing media:*

- Water spray, carbon dioxide, dry chemical powder or appropriate foam.

*Unsuitable extinguishing media:*

- No data available

*Special exposure hazards:*

- Emits toxic fumes under fire conditions.

*Instructions:*

- Due to small quantities : no special instructions apply

*Special protective equipment for firefighters:*

- Due to small quantities : no special instructions apply

#### 6. ACCIDENTAL RELEASE MEASURES

##### **Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O**

##### **Sodium hypochlorite**

*Person-related safety precautions:* see paragraph 8

*Measures for environmental protection:*

- Do not allow to enter sewerage system.

*Measures for cleaning / collecting :*

- Absorb with liquid binding material such as vermiculite, sand or other inert material.
- contain recovered material in a suitable receptacle.
- Clean up affected area.

##### **N-Acetyl-L-cysteine**

*Person-related safety precautions:* see paragraph 8

*Measures for cleaning / collecting :*

- Sweep up, place in bag and hold for waste disposal.
- Avoid raising dust
- Ventilate area and wash spill site after material pickup is complete

#### 7. HANDLING AND STORAGE

##### **Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O**

*Manipulation:*

- Observe normal hygiene standards.
- Discharge according to local regulations
- Remove and clean contaminated clothing
- Handle and open the container with care

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*Stockage:*

- Keep container tightly closed
- No aluminium, tin or zinc containers.
- Store at room temperature

*Specific purposes :*

- NA

**Sodium hypochlorite**

*Manipulation:*

- May be under pression
- Sensitive to light
- Limited shelf life

*Stockage:*

- Keep container tightly closed
- Protected from light
- Store at room temperature
- May decompose forming gaseous products, especially when stored over long periods.
- No metal containers

*Specific purposes :*

- NA

**N-Acetyl-L-cysteine**

*Manipulation:*

- Avoid inhalation, contact with eyes, skin and clothing.
- Avoid prolonged or repeated exposure

*Stockage:*

- Keep container tightly closed

*Specific purposes :*

- NA

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O**

8.1 *Exposure limits*

	mg/m <sup>3</sup>
TLV-TWA	-
TLV-STEL	-
TLV-Ceiling	2
OES-LTEL	-
OES-STEL	2
MAK	-
MAC-Ceiling	2
VME 8h	2
VME 15 min	-
GWBB 8h	-
GWBB 15 min	-
Momentary value	2
OSHA Permissible Exposure Limit (PEL)	2 (ceiling)
ACGIH Threshold Limit Value (TLV)	2 (ceiling)

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#### 8.2 Exposure controle

##### 8.2.1 Exposure to persons

- Protection of the respiratory system* - required when vapours / aerosols are generated  
 - NIOSH type N95 or better filters
- Hand protection* - Gloves, type: nitrile rubber, layer thickness: 0.11 mm, breakthrough time > 480 min
- Eye protection* - chemical safety goggles
- Skin protection* - Suitable protective clothing

##### 8.2.2 Exposure to the environment

Aquatic classification : Very toxic to aquatic organisms.  
 Not toxic in the concentration present in this preparation.

Ozone classification: No data available.

The substance is considered as not bioaccumulative. Log Pow = NA  
 BCF = NA

Easily degradable.

### Sodium hypochlorite

#### 8.3 Exposure limits

AIHA (WEEL) - STEL	2 mg/m <sup>3</sup>
OSHA Permissible Exposure Limit (PEL)	0.5 ppm (TWA) 1 ppm (STEL)
ACGIH Threshold Limit Value (TLV)	1 ppm (TWA) 3 ppm (STEL)

#### 8.4 Exposure controle

##### 8.4.1 Exposure to persons

- Protection of the respiratory system* - required when vapours / aerosols are generated
- Hand protection* - Gloves, type: nitrile rubber, layer thickness: 0.11 mm, breakthrough time > 480 min
- Eye protection* - chemical safety goggles
- Skin Protection* - Suitable protective clothing

##### 8.4.2 Exposure to the environment

Aquatic classification : Very toxic to aquatic organisms.  
 Not toxic in the concentration present in this preparation.

Ozone classification: No data available.

The substance is considered as not bioaccumulative. Log Pow = NA  
 BCF = NA

Easily degradable.

### N-Acetyl-L-cysteine

#### 8.5 Exposure limits

No data available.

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8.6 *Exposure control*

8.6.1 Exposure to persons

*Protection of the respiratory system* - wear dust mask

*Hand protection* - protective gloves

*Eye protection* - chemical safety goggles

8.6.2 Exposure to the environment

No data available.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O** : Liquid

**Sodium hypochlorite** : Liquid

**N-Acetyl-L-cysteine**: Powder

## 10. STABILITY AND REACTIVITY

**Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O**

Conditions to avoid : No information available.

Materials to avoid: Metals, light metals hydrogen could be formed (risk of explosion)  
Ammonium compounds: ammonia could be formed  
Acids

Decomposition Products: No information available.

**Sodium hypochlorite**

Conditions to avoid : Warming (decomposition)

Materials to avoid: Acids, reducing agents, hydrogen peroxide, permanganates

Decomposition Products: see paragraph 5

Other information: light sensitive

**N-Acetyl-L-cysteine**

Materials to be avoided: no dangerous reactions known.

Decomposition Products: no dangerous decomposition products known.

## 11. TOXICOLOGICAL INFORMATION

**Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O**

**Acute toxicity :**

LD50 cutaneuos (rabbit) 1350 mg/kg

**Chronic toxicity :**

EC carc. Cat. not listed

EC muta. Cat. not listed

EC repr. Cat. not listed

Carcinogenicity (TLV) not listed

Carcinogenicity (MAC) not listed

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Carcinogenicity (VME)	not listed
Carcinogenicity (GWBB)	not listed
Carcinogenicity (MAK)	not listed
Mutagenicity (MAK)	not listed
Teratogenicity (MAK)	not listed
IARC classification	not listed

#### Other toxicological information :

##### Property that must be anticipated on the basis from the components of the preparation

Inhalation:	burns of mucous membranes
Skin contact :	burns, necrosis
Eye contact :	burns, necrosis, risk of blindness!
Ingestion :	burns of: mouth, pharynx, mucous membrane, oesophagus gastrointestinal tract. Risk of perforation in the oesophagus and stomach
<b>Systemic effects :</b>	collapse, death.

#### Sodium hypochlorite

##### Acute toxicity :

LD50 oral (rat)	8200 mg/kg
Specific symptoms in animal studies :	
Eye irritation test (rabbit) :	burns
Skin irritation test (rabbit) :	burns

##### Chronic toxicity :

Sensibilization :	
Experience in man: no sensitizing effect	
Sensitization test (guinea pig) :	no sensitizing effect
Non carcinogenic in animal experiments.	
Mutagenicity (mammal cell test): micronucleus negative	
Bacterial mutagenicity: Salmonella typhimurium: negative	
Bacterial mutagenicity: Bacillus subtilus: negative	
No impairment of reproductive performance in animal experiments.	

#### Other toxicological information :

##### Property that must be anticipated on the basis from the components of the preparation

Inhalation:	irritation of mucous membranes, coughing and dyspnoea
Skin contact :	burns
Eye contact :	burns, risk of blindness!
Ingestion :	burns in mouth, throat, oesophagus and gastrointestinal tract. Risk of perforation in the oesophagus and stomach

#### N-Acetyl-L-cysteine

Inhalation:	Causes irritation by inhalation
Skin contact:	May be irritating to the skin
Eye contact:	Causes eye irritation
ingestion:	Causes irritation by ingestion
LD / LC50 (rat):	5050 mg/kg

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### 12. ECOLOGICAL INFORMATION

#### Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O

*Ecological effects :*

Fish and plankton : Harmful effect due to pH shift.  
Does not cause biological oxygen deficit.  
Neutralization possible in waste water treatment plants.  
Onchorhynchus mykiss LC50 : 45.4 mg/l/96h (anhydrous substance)  
L. macrochirus LC50 : 99 mg/l/48h (anhydrous substance)  
Daphnia magna EC50 : 76 mg/l/24h (anhydrous substance)

*Mobility :*

Volatile organic compounds (VOC) : NA

Soluble in water

*Biological Degradation:*

Methods for the determination of biodegradability are not applicable to inorganic substances.

*Bioaccumulation :*

No bioaccumulation.

*Further ecologic data :*

Do not allow to enter waters, waste water or soil !

WGK : 1

Not dangerous for the ozon layer

#### Sodium hypochlorite

*Ecological effects :*

Forms corrosive mixtures with water even if diluted.

Fish and plankton: Highly toxic for aquatic organisms.  
Harmful effect due to pH shift.  
Onchorhynchus mykiss LC50 : 0.07 mg/l/48h  
P. promelas LC50 : 1.34 mg/l/96h  
L. macrochirus LC50 : 1.1 mg/l/96h  
Daphnia magna EC50 : 0.07 – 0.7 mg/l/24h  
Photobacterium phosphoreum EC50 : 100 mg/l/15min

*Biological Degradation:*

Methods for the determination of biodegradability are not applicable to inorganic substances.

*Bioaccumulation :*

Not bioaccumulative.

*Further ecologic data :*

Do not allow to enter waters, waste water or soil !

#### N-Acetyl-L-cysteine

No information available.



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### 13. DISPOSAL CONSIDERATIONS

*Product:*

Chemicals must be disposed of in compliance with the respective national requirements.

*Disposal methods:*

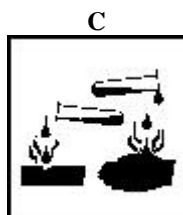
- Dehydrate / make insoluble
- Immobilize the toxic or harmful components
- Treat using the best available techniques before discharge into drains or the aquatic environment

### 14. TRANSPORT INFORMATION

No restrictions

### 15. REGULATORY INFORMATION

#### Sodium hydroxide and tri-sodium citrate .3H<sub>2</sub>O



Corrosive

- R34: Causes burns  
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S37/39: Wear suitable protective clothing, gloves and eye/face protection..  
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

### 16. OTHER INFORMATIONS

This product is designed for use by professionals.

Text of any R phrases referred to under heading 2 :

- R35 : Causes severe burns  
R34: Causes burns  
R31 : Contact with acids liberates toxic gas  
R50 : Very toxic to aquatic organisms

Abbreviations used :

NA : not applicable

The information contained herein is based on the present state of our knowledge.  
It characterizes the product with regard to the appropriate safety precautions.  
It does not represent a guarantee of the properties of the product.