

Creation Date 16-Nov-2010 Revision Date 04-Aug-2014 Revision Number 7

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

1.1. Product identifier

Product Description: 2-Mercaptopyridine-N-oxide, sodium salt, 40 w/w % aqueous solution

Cat No.: 257740000; 257740010; 257740025; 257740050

Synonyms Sodium omadine; N-Hydroxy-2-pyridinethione, sodium salt; 2-Pyridinethiol-1-oxide, sodium

salt

Molecular Formula C5 H4 N Na O S

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company Acros Organics BVBA

Janssen Pharmaceuticalaan 3a

2440 Geel, Belgium

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

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Acute oral toxicityCategory 4Acute dermal toxicityCategory 4Acute Inhalation Toxicity - VaporsCategory 4Skin Corrosion/irritationCategory 2Serious Eye Damage/Eye IrritationCategory 2

Environmental hazards

Acute aquatic toxicity
Chronic aquatic toxicity
Category 1
Category 1

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Symbol(s) Xn - Harmful

N - Dangerous for the environment

2-Mercaptopyridine-N-oxide, sodium salt, 40 w/w % aqueous solution

Revision Date 04-Aug-2014

R-phrase(s) R50 - Very toxic to aquatic organisms

R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed

R36/38 - Irritating to eyes and skin

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.2. Label elements



Signal Word

Warning

Hazard Statements

H319 - Causes serious eye irritation

H315 - Causes skin irritation

H302 - Harmful if swallowed

H312 - Harmful in contact with skin

H332 - Harmful if inhaled

H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

P270 - Do not eat, drink or smoke when using this product

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P312 - Call a POISON CENTER or doctor/physician if you feel unwell

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

2.3. Other hazards

Stench

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008	DSD Classification - 67/548/EEC
Water	7732-18-5	231-791-2	60	-	-
Sodium pyridithione	3811-73-2	EEC No. 223-296-5	40	Aquatic acute 1 (H400) Aquatic chronic 1 (H410) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332)	Xn;R20/21/22 Xi; R36/38 N; R50

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

2-Mercaptopyridine-N-oxide, sodium salt, 40 w/w % aqueous solution

Revision Date 04-Aug-2014

4.1. Description of first aid measures

General Advice If symptoms persist, call a physician.

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

Obtain medical attention.

Skin ContactObtain medical attention. Wash off immediately with plenty of water for at least 15 minutes.

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

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Protection of First-aidersUse personal protective equipment.

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

None reasonably foreseeable.

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

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media which must not be used for safety reasons

No information available.

5.2. Special hazards arising from the substance or mixture

Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2), Sulfur oxides.

5.3. Advice for firefighters

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Ensure adequate ventilation.

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. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

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

Revision Date 04-Aug-2014

Page 4/10

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

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

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits

List source(s):

Component	Italy	Germany	Portugal	The Netherlands	Finland
Sodium pyridithione		TWA: 1 mg/m ³ (8			
		Stunden). AGW -			
		exposure factor 2			
		TWA: 1 mg/m ³ (8			
		Stunden). MAK			
		Höhepunkt: 2 mg/m ³			
		Haut			

Component	Austria	Denmark	Switzerland	Poland	Norway
Sodium pyridithione	Haut	TWA: 1 mg/m ³ 8 timer	Haut/Peau		
	MAK-KZW: 4 mg/m ³ 15	Hud	STEL: 2 mg/m ³ 15		
	Minuten		Minuten		
	MAK-TMW: 1 mg/m ³ 8		TWA: 1 mg/m ³ 8		
	Stunden		Stunden		

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Sodium pyridithione			TWA: 1 mg/m ³ 8 urah Koža STEL: 4 mg/m ³ 15 minutah		

Biological limit values

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

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

Derived No Effect Level (DNEL) No information available

Revision Date 04-Aug-2014

Route of	exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oı	al				
Der	mal				
Inhal	ation				

Predicted No Effect Concentration No information available. (PNEC)

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

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

Long sleeved clothing Skin and body protection

Inspect gloves before use. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Remove gloves with care avoiding skin contamination.

Respiratory Protection 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: Organic gases and vapours filter Type A Brown conforming to

EN14387

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure Small scale/Laboratory use

limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or: Half mask: EN140; plus filter, EN

141

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

Handle in accordance with good industrial hygiene and safety practice. **Hygiene Measures**

Prevent product from entering drains. Do not allow material to contaminate ground water **Environmental exposure controls**

system. Local authorities should be advised if significant spillages cannot be contained.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

2-Mercaptopyridine-N-oxide, sodium salt, 40 w/w % aqueous solution

Revision Date 04-Aug-2014

Liquid

Liquid

9.1. Information on basic physical and chemical properties

Appearance Amber **Physical State** Liquid

Odor Stench

No data available **Odor Threshold**

8.5-10 Hq

-30 - -25 °C / -22 - -13 °F Melting Point/Range

No data available **Softening Point**

Boiling Point/Range 109 °C / 228.2 °F @ 760 mmHg

Flash Point No information available Method - No information available

Evaporation Rate No data available

Flammability (solid, gas) Not applicable

No data available **Explosion Limits**

19 mmHg @ 25 °C **Vapor Pressure**

Vapor Density 5.7 (Air = 1.0)

Specific Gravity / Density 1.220 **Bulk Density** Not applicable

Water Solubility 547 g/L

Solubility in other solvents No information available

Partition Coefficient (n-octanol/water)

Autoignition Temperature No data available

Decomposition temperature 250 °C

No data available **Viscosity Explosive Properties** No information available **Oxidizing Properties** No information available

9.2. Other information

Molecular Formula C5 H4 N Na O S

Molecular Weight 149.12

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity None known, based on information available

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

Hazardous polymerization does not occur. **Hazardous Polymerization**

Hazardous Reactions None under normal processing.

10.4. Conditions to avoid

Incompatible products. Excess heat.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO₂). Sulfur oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

2-Mercaptopyridine-N-oxide, sodium salt, 40 w/w % aqueous solution

Revision Date 04-Aug-2014

Product Information

(a) acute toxicity;

Oral Category 4

ATE = 1208 mg/kg

Category 4 **Dermal**

ATE = 1800 mg/kg

Inhalation Category 4

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium pyridithione	870 mg/kg (Mouse)	700 mg/kg (Rabbit)	

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

No data available Respiratory Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

No data available (g) reproductive toxicity;

No data available (h) STOT-single exposure;

No data available (i) STOT-repeated exposure;

No information available. **Target Organs**

(i) aspiration hazard; No data available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for

complete information

Symptoms / effects,both acute and No information available

delayed

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity effects The product contains following substances which are hazardous for the environment. Very

toxic to aquatic organisms, may cause long-term adverse effects in the aquatic

environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Sodium pyridithione	EC50 = 0.00264 mg/L	EC50 = 0.0088 mg/L 48		
1	96h	h i		

12.2. Persistence and degradability Readily biodegradable

Persistence Soluble in water, Persistence is unlikely, based on information available.

Degradation in sewage Contains substances known to be hazardous to the environment or not degradable in waste

treatment plant water treatment plants. 2-Mercaptopyridine-N-oxide, sodium salt, 40 w/w % aqueous solution

Revision Date 04-Aug-2014

12.3. Bioaccumulative potential Does not bioaccumulate; BCF = 50; Bioaccumulation is unlikely

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

environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB

assessment

No data available for assessment.

12.6. Other adverse effects

Endocrine Disruptor Information Persistent Organic Pollutant Ozone Depletion Potential

This product does not contain any known or suspected endocrine disruptors

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

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused

Products

Should not be released into the environment. 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 Catalogue, Waste Codes are not product specific, but

application specific.

Other Information Do not dispose of waste into sewer. Waste codes should be assigned by the user based on

the application for which the product was used. Do not empty into drains. Do not let this

chemical enter the environment.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number UN3082

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S 14.2. UN proper shipping name

14.3. Transport hazard class(es) Ш

14.4. Packing group

Marine Pollutant This product contains a chemical which is listed as a marine pollutant according to

IMDĠ/IMO

ADR

14.1. UN number

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S 14.2. UN proper shipping name

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

<u>IATA</u>

14.1. UN number UN3082

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S 14.2. UN proper shipping name

14.3. Transport hazard class(es) 9

14.4. Packing group Ш

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

2-Mercaptopyridine-N-oxide, sodium salt, 40 w/w % aqueous solution

Revision Date 04-Aug-2014

14.7. Transport in bulk according to Not applicable, packaged goods Annex II of MARPOL73/78 and the IBC Code

SECTION 15: REGULATORY INFORMATION

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

International Inventories X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Water	231-791- 2	-		Х	Х	-	Х	-	Х	Х	Х
Sodium pyridithione	223-296- 5	-		Х	Х	-	Х	Х	Х	Х	Х

National Regulations

WGK Classification WGK Classification Hazardous to water/Class 2

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Sodium pyridithione	WGK 2	

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

Take note of Dir 94/33/EC on the protection of young people at work

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

15.2. Chemical safety assessment

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

SECTION 16: OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3

R50 - Very toxic to aquatic organisms

R36/38 - Irritating to eyes and skin

R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed

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

H302 - Harmful if swallowed

H312 - Harmful in contact with skin

H332 - Harmful if inhaled

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

Legend

CAS - Chemical Abstracts Service

WEL - Workplace Exposure Limit

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

ENCS - Japanese Existing and New Chemical Substances

Inventory

Substances List

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

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

TWA - Time Weighted Average

ACGIH - American Conference of Governmental Industrial Hygienists

IARC - International Agency for Research on Cancer

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

2-Mercaptopyridine-N-oxide, sodium salt, 40 w/w % aqueous solution

Revision Date 04-Aug-2014

DNEL - Derived No Effect Level PNEC - Predicted No Effect Concentration

RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% NOEC - No Observed Effect Concentration

PBT - Persistent, Bioaccumulative, Toxic

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

LD50 - Lethal Dose 50%

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

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 Compounds

Key literature references and sources for data

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

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

Physical hazards On basis of test data **Health Hazards** Calculation method **Environmental hazards** Calculation method

Training Advice

Chemical incident response training.

Creation Date 16-Nov-2010 **Revision Date** 04-Aug-2014

Revision Summary (M)SDS sections updated, 2, 3.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet