

# Safety Data Sheet

## HARDENER 4360



Safety Data Sheet dated 19/1/2023, version 14

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Mixture identification:  
Trade name: HARDENER 4360  
Trade code: MIL1419

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

HARDENER FOR POLYAQUA 4360

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

Company:  
N.V.S.C. Srl  
VIA S. MARTINO, 6 - 15028 QUATTORDIO (AL) - ITALIA TEL. +39-0131-773403

#### Competent person responsible for the safety data sheet:

g.venezia@nvsc.it

#### 1.4. Emergency telephone number

National Poison Information Service (NPIS) – Birmingham (UK) –director.birmingham.unit@npis.org

Croatian Institute for Toxicology and Antidoping – Zagreb (HR) –+385 01 46 41 368

Centro de Informacao Antivenenos Instituto nacional de Emergencia Medica Lisboa (P)- +351 213 303 271

Norwegian Environment Agency – Trondheim (N) - +47 73 58 05 00 Bloemfontein Poison Control and Medicine

Information Centre – Bloemfontein (ZA) - +27 824 910 160

Israel Poison Information Centre – Haifa (IL) - +97 248 541 900


Swiss Toxicological Information Centre – Zurich (CH) - +41 44 251 51 51

Riyadh Poison Control Center – Riyadh (SA) - +966 111 232 41 89 –pcc-riyadh@moh.gov.sa


### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

 Warning, Flam. Liq. 3, Flammable liquid and vapour.

 Warning, Acute Tox. 4, Harmful if inhaled.

 Warning, Skin Sens. 1, May cause an allergic skin reaction.

 Warning, STOT SE 3, May cause respiratory irritation.

Adverse physicochemical, human health and environmental effects:

No other hazards

#### 2.2. Label elements

Hazard pictograms:



Warning

Hazard statements:

H226 Flammable liquid and vapour.

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H332 Harmful if inhaled.  
H317 May cause an allergic skin reaction.  
H335 May cause respiratory irritation.

### Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...  
P312 Call a POISON CENTER/doctor/... if you feel unwell.  
P370+P378 In case of fire: Use ... to extinguish.  
P403+P235 Store in a well-ventilated place. Keep cool.

### Special Provisions:

EUH204 Contains isocyanates. May produce an allergic reaction.

### Contains

POLI(ESAMETILEN DIISOCIANATO)

### Special provisions according to Annex XVII of REACH and subsequent amendments:

None

### 2.3. Other hazards

No PBT, vPvB or endocrine disruptor substances present in concentration  $\geq 0.1\%$

### Other Hazards:

No other hazards

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## SECTION 3: Composition/information on ingredients

### 3.1. Substances

N.A.

### 3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
$\geq 70\%$ - $< 80\%$	POLI(ESAMETILEN DIISOCIANATO)	CAS: 28182-81-2 EC: 500-060-2 REACH No.: 01-21194857 96-17	 3.4.2/1 Skin Sens. 1 H317  3.1/4/Inhal Acute Tox. 4 H332  3.8/3 STOT SE 3 H335 Specific Concentration Limits: C $\geq 1\%$ : Skin Sens. 1 H317 C $\geq 20\%$ : STOT SE 3 H335

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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### In case of skin contact:

Immediately take off all contaminated clothing.  
Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.  
Wash thoroughly the body (shower or bath).  
Remove contaminated clothing immediately and dispose off safely.

#### In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

#### In case of Ingestion:

Do NOT induce vomiting.

#### In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

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- In case of inhalation, consult a doctor immediately and show him packing or label.
- 4.2. Most important symptoms and effects, both acute and delayed  
None
- 4.3. Indication of any immediate medical attention and special treatment needed  
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).  
Treatment:  
None

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### SECTION 5: Firefighting measures

- 5.1. Extinguishing media  
Suitable extinguishing media:  
Water.  
Carbon dioxide (CO<sub>2</sub>).  
In case of fire: Use ... to extinguish.  
Extinguishing media which must not be used for safety reasons:  
None in particular.
- 5.2. Special hazards arising from the substance or mixture  
Do not inhale explosion and combustion gases.  
Burning produces heavy smoke.  
Hazardous combustion products:
- 5.3. Advice for firefighters  
Use suitable breathing apparatus .  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Move undamaged containers from immediate hazard area if it can be done safely.

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### SECTION 6: Accidental release measures

- 6.1. Personal precautions, protective equipment and emergency procedures  
For non emergency personnel:  
Wear personal protection equipment.  
Wear breathing apparatus if exposed to vapours/dusts/aerosols.  
Provide adequate ventilation.  
Use appropriate respiratory protection.  
See protective measures under point 7 and 8.  
For emergency responders:  
Wear personal protection equipment.
- 6.2. Environmental precautions  
Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.  
Retain contaminated washing water and dispose it.  
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.  
Suitable material for taking up: absorbing material, organic, sand
- 6.3. Methods and material for containment and cleaning up  
Wash with plenty of water.
- 6.4. Reference to other sections  
See also section 8 and 13

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### SECTION 7: Handling and storage

- 7.1. Precautions for safe handling  
Avoid contact with skin and eyes, inhalation of vapours and mists.  
Use localized ventilation system.  
Don't use empty container before they have been cleaned.

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Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.

See also section 8 for recommended protective equipment.

Advice on general occupational hygiene:

Contaminated clothing should be changed before entering eating areas.

Do not eat or drink while working.

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

Keep away from food, drink and feed.

Incompatible materials:

None in particular.

Instructions as regards storage premises:

Adequately ventilated premises.

Packaging materials:

### 7.3. Specific end use(s)

None in particular

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No occupational exposure limit available

#### DNEL Exposure Limit Values

POLI(ESAMETILEN DIISOCIANATO) - CAS: 28182-81-2

Consumer: 857.9 04 - Exposure: Human Inhalation - Frequency: Short Term, local effects

Consumer: 102.34 04 - Exposure: Human Inhalation - Frequency: Long Term, local effects

Worker Professional: 960 04 - Exposure: Human Inhalation - Frequency: Short Term, local effects

Worker Professional: 480 04 - Exposure: Human Inhalation - Frequency: Long Term, local effects

#### PNEC Exposure Limit Values

POLI(ESAMETILEN DIISOCIANATO) - CAS: 28182-81-2

Target: Fresh Water - Value: 0.127 mg/l

Target: Marine water - Value: 0.0127 mg/l

Target: Freshwater sediments - Value: 266700 mg/kg

Target: Marine water sediments - Value: 26670 mg/kg

Target: 10 - Value: 1.27 mg/l

Target: Microorganisms in sewage treatments - Value: 3828 mg/l

Target: 09 - Value: 53182 mg/kg

### 8.2. Exposure controls

#### Eye protection:

Not needed for normal use. Anyway, operate according good working practices.

#### Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

#### Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

#### Respiratory protection:

Use adequate protective respiratory equipment.

#### Thermal Hazards:

None

#### Environmental exposure controls:

None

#### Appropriate engineering controls:

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None

### SECTION 9: Physical and chemical properties

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

Properties	Value	Method:	Notes
Physical state:	Liquid	--	--
Colour:	Transparent	--	--
Odour:	Characteristic	--	--
Melting point/freezing point:	N.A.	--	--
Boiling point or initial boiling point and boiling range:	164°C	--	--
Flammability:	Flam. Liq. 3, H226	--	--
Lower and upper explosion limit:	N.A.	--	--
Flash point:	57°C ° C	--	--
Auto-ignition temperature:	N.A.	--	--
Decomposition temperature:	N.A.	--	--
pH:	N.A.	--	--
Kinematic viscosity:	> 20,5 mm <sup>2</sup> /sec (40 °C)	--	--
Solubility in water:	MISC	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient n-octanol/water (log value):	N.A.	--	--
Vapour pressure:	N.A.	--	--
Density and/or relative density:	1.07 g/ml	--	--
Relative vapour density:	N.A.	--	--

#### Particle characteristics:

Particle size:	N.A.	--	--
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#### 9.2. Other information

Properties	Value	Method:	Notes
Explosive properties:	nessuna	--	--
Viscosity:	>20.5 mm <sup>2</sup> /s 40°C	--	--
Oxidizing properties:	nessuna	--	--

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Stable under normal conditions

#### 10.2. Chemical stability

Stable under normal conditions

#### 10.3. Possibility of hazardous reactions

None

#### 10.4. Conditions to avoid

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- Stable under normal conditions.
- 10.5. Incompatible materials  
None in particular.
- 10.6. Hazardous decomposition products  
None.

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### SECTION 11: Toxicological information

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

Toxicological information of the product:

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a) acute toxicity

The product is classified: Acute Tox. 4 H332  
ATEmix - Inhalation (Vapours) 15,7143 mg/l

b) skin corrosion/irritation

Not classified

Based on available data, the classification criteria are not met

c) serious eye damage/irritation

Not classified

Based on available data, the classification criteria are not met

d) respiratory or skin sensitisation

The product is classified: Skin Sens. 1 H317

e) germ cell mutagenicity

Not classified

Based on available data, the classification criteria are not met

f) carcinogenicity

Not classified

Based on available data, the classification criteria are not met

g) reproductive toxicity

Not classified

Based on available data, the classification criteria are not met

h) STOT-single exposure

The product is classified: STOT SE 3 H335

i) STOT-repeated exposure

Not classified

Based on available data, the classification criteria are not met

j) aspiration hazard

Not classified

Based on available data, the classification criteria are not met

Toxicological information of the main substances found in the product:

N.A.

11.2. Information on other hazards

Endocrine disrupting properties:

No endocrine disruptor substances present in concentration  $\geq 0.1\%$

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### SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.

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Not classified for environmental hazards

Based on available data, the classification criteria are not met

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

N.A.

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- 12.4. Mobility in soil  
N.A.
- 12.5. Results of PBT and vPvB assessment  
vPvB Substances: None - PBT Substances: None
- 12.6. Endocrine disrupting properties  
No endocrine disruptor substances present in concentration  $\geq 0.1\%$
- 12.7. Other adverse effects  
None

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### SECTION 13: Disposal considerations

- 13.1. Waste treatment methods  
Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

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### SECTION 14: Transport information



- 14.1. UN number or ID number
  - ADR-UN Number: 1263
  - ADR/RID/ADN-UN Number: 1263
  - ADR/RID-UN Number: 1263
  - ADR/ADN-UN Number: 1263
  - IATA-UN Number: 1263
  - IMDG-UN Number: 1263
- 14.2. UN proper shipping name
  - ADR-Shipping Name: PAINT
  - ADR/RID-Shipping Name: PAINT
  - ADR/ADN-Shipping Name: PAINT
  - ADR/RID/ADN-Shipping Name: PAINT
  - IATA-Shipping Name: PAINT
  - IMDG-Shipping Name: PAINT
- 14.3. Transport hazard class(es)
  - ADR-Class: 3
  - ADR/RID-Class: 3
  - ADR/ADN-Class: 3
  - ADR/RID/ADN-Class: 3
  - ADR - Hazard identification number: 30
  - IATA-Class: 3
  - IATA-Label: 3
  - IMDG-Class: 3
- 14.4. Packing group
  - ADR-Packing Group: III
  - ADR/RID-Packing Group: III
  - ADR/ADN-Packing Group: III
  - ADR/RID/ADN-Packing Group: III
  - IATA-Packing group: III
  - IMDG-Packing group: III
- 14.5. Environmental hazards
  - ADR-Environmental Pollutant: No

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- IMDG-Marine pollutant: No  
IMDG-EmS: F-E , S-E
- 14.6. Special precautions for user  
ADR-Subsidiary hazards: -  
ADR-S.P.: 163 367 650  
ADR-Transport category (Tunnel restriction code): 3 (D/E)  
IATA-Passenger Aircraft: 355  
IATA-Subsidiary hazards: -  
IATA-Cargo Aircraft: 366  
IATA-S.P.: A3 A72 A192  
IATA-ERG: 3L  
IMDG-Subsidiary hazards: -  
IMDG-Stowage and handling: Category A  
IMDG-Segregation: -
- 14.7. Maritime transport in bulk according to IMO instruments  
N.A.

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#### SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture  
Dir. 98/24/EC (Risks related to chemical agents at work)  
Dir. 2000/39/EC (Occupational exposure limit values)  
Regulation (EC) n. 1907/2006 (REACH)  
Regulation (EC) n. 1272/2008 (CLP)  
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013  
Regulation (EU) n. 2020/878  
Regulation (EU) n. 286/2011 (ATP 2 CLP)  
Regulation (EU) n. 618/2012 (ATP 3 CLP)  
Regulation (EU) n. 487/2013 (ATP 4 CLP)  
Regulation (EU) n. 944/2013 (ATP 5 CLP)  
Regulation (EU) n. 605/2014 (ATP 6 CLP)  
Regulation (EU) n. 2015/1221 (ATP 7 CLP)  
Regulation (EU) n. 2016/918 (ATP 8 CLP)  
Regulation (EU) n. 2016/1179 (ATP 9 CLP)  
Regulation (EU) n. 2017/776 (ATP 10 CLP)  
Regulation (EU) n. 2018/669 (ATP 11 CLP)  
Regulation (EU) n. 2018/1480 (ATP 13 CLP)  
Regulation (EU) n. 2019/521 (ATP 12 CLP)  
Regulation (EU) n. 2020/217 (ATP 14 CLP)  
Regulation (EU) n. 2020/1182 (ATP 15 CLP)  
Regulation (EU) n. 2021/643 (ATP 16 CLP)  
Regulation (EU) n. 2021/849 (ATP 17 CLP)  
Regulation (EU) n. 2022/692 (ATP 18 CLP)
- Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:  
Restrictions related to the product:  
Restriction 3  
Restriction 40
- Restrictions related to the substances contained:  
No restriction.
- Volatile Organic compounds - VOCs = 0.00 g/l  
Volatile CMR substances = 0.00 %  
Halogenated VOCs which are assigned the risk phrase R40 = 0.00 %  
Organic Carbon - C = 0.00  
Where applicable, refer to the following regulatory provisions :



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Directive 2012/18/EU (Seveso III)  
Regulation (EC) nr 648/2004 (detergents).  
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):  
Seveso III category according to Annex 1, part 1  
Product belongs to category: P5c

### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

## SECTION 16: Other information

Full text of phrases referred to in Section 3:

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

Hazard class and hazard category	Code	Description
Flam. Liq. 3	2.6/3	Flammable liquid, Category 3
Acute Tox. 4	3.1/4/Inhal	Acute toxicity (inhalation), Category 4
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3

This safety data sheet has been completely updated in compliance to Regulation 2020/878. Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Flam. Liq. 3, H226	On basis of test data
Acute Tox. 4, H332	Calculation method
Skin Sens. 1, H317	Calculation method
STOT SE 3, H335	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities

SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
ATE: Acute Toxicity Estimate  
ATEmix: Acute toxicity Estimate (Mixtures)  
CAS: Chemical Abstracts Service (division of the American Chemical Society).

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CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.