

1 Identification of the substance/preparation and of the company/undertaking

- Product details
- Trade name: **MS Hardener 81 Slow**
- Article number: 8112
- Application of the substance / the preparation Hardening agent/ Curing agent
- Manufacturer/Supplier:
 Kristal Coatings B.V.
 Platinawerf 22B
 6641 TL Beuningen - Holland
 Tel: 0031 24 67 526 36
 Fax: 0031 24 67 533 60
- Further information obtainable from: Product safety department: info@kristalcoatings.nl
- Information in case of emergency: 0031 24 67 526 36

2 Hazards identification

- Hazard description:



Xn Harmful

- Information concerning particular hazards for human and environment:
 The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
 R 10 Flammable.
 R 20/21 Harmful by inhalation and in contact with skin.
 R 43 May cause sensitisation by skin contact.
 R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 R 65 Harmful: may cause lung damage if swallowed.
 Contains isocyanates. See information supplied by the manufacturer
 Restricted to professional users.
- Classification system:
 The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
- GHS label elements

**Danger**

- 3.10/1 - May be fatal if swallowed and enters airways.

**Warning**

- 2.6/3 - Flammable liquid and vapour.

**Warning**

- 3.1/4 - Harmful in contact with skin.
- 3.1/4 - Harmful if inhaled.
- 3.4/1 - May cause an allergic skin reaction.
- 4.1/3 - Harmful to aquatic life with long lasting effects.

- Prevention:
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 Keep container tightly closed.
 Ground/bond container and receiving equipment.
 Use explosion-proof electrical/ventilating/lighting/ equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Avoid breathing dust/fume/gas/mist/vapours/spray.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing should not be allowed out of the workplace.
 Avoid release to the environment.
 Wear protective gloves/protective clothing/eye protection/face protection.
- Response:
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
 IF ON SKIN: Wash with plenty of soap and water.
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

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Call a POISON CENTER or doctor/physician if you feel unwell.
 Specific treatment (see label).
 Specific measures (see label).
 Do NOT induce vomiting.
 If skin irritation or rash occurs: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.

· **Storage:**

Store in a well-ventilated place. Keep cool.
 Store locked up.

· **Disposal:**

Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

· **Chemical characterization**

· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 28182-81-2 Polymer	Hexane, 1,6-diisocyanato-, homopolymer Xi; R 43 Warning: 3.4.S/1	25-50%
CAS: 112-07-2 EINECS: 203-933-3	2-butoxyethyl acetate Xn; R 20/21 Danger: 3.1.D/3, 3.1.I/4 Warning: 2.6/4	10-25%
CAS: 108-65-6 EINECS: 203-603-9	2-methoxy-1-methylethyl acetate Xi; R 10-36 Warning: 2.6/3; 3.3/2A	10-25%
CAS: 1330-20-7 EINECS: 215-535-7	xylene Xn, Xi; R 10-20/21-38 Danger: 3.1.D/3, 3.1.I/4, 3.2/2 Warning: 2.6/3	10-25%
CAS: 64742-95-6 EINECS: 265-199-0	Solvent naphtha (petroleum), light arom. Xn, Xi, N; R 10-37-51/53-65 Danger: 3.10/1 Warning: 2.6/3; 3.8/3 4.1.C/2	2.5-10%
CAS: 123-86-4 EINECS: 204-658-1	n-butyl acetate R 10-66-67 Warning: 2.6/3; 3.8/3	2.5-10%
CAS: 100-41-4 EINECS: 202-849-4	ethylbenzene Xn, F; R 11-20 Danger: 2.6/2 Warning: 3.1.I/4	2.5-10%
CAS: 53880-05-0	Isophorondiisocyanat, homopolymeer Xi; R 43 Warning: 3.4.S/1	0.5-2.5%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water.

· **After swallowing:** If symptoms persist consult doctor.

5 Fire-fighting measures

· **Suitable extinguishing agents:** CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

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- Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Person-related safety precautions: Wear protective equipment. Keep unprotected persons away.
- Measures for environmental protection:
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- Measures for cleaning/collecting:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

7 Handling and storage

- Handling:
- Information for safe handling:
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used.
Examination of lung function should be carried out on a regular basis on persons spraying this preparation.
- Information about fire - and explosion protection:
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- Storage:
- Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions:
Protect from humidity and water.
This product is hygroscopic.
Caution when reopening receptacles with broken seal.
Keep container tightly sealed.

8 Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.
- Ingredients with limit values that require monitoring at the workplace:

112-07-2 2-butoxyethyl acetate

WEL Short-term value: 50 ppm
Long-term value: 20 ppm
Sk

108-65-6 2-methoxy-1-methylethyl acetate

WEL Short-term value: 548 mg/m³, 100 ppm
Long-term value: 274 mg/m³, 50 ppm
Sk

1330-20-7 xylene

WEL Short-term value: 441 mg/m³, 100 ppm
Long-term value: 220 mg/m³, 50 ppm
Sk; BMGV

123-86-4 n-butyl acetate

WEL Short-term value: 966 mg/m³, 200 ppm
Long-term value: 724 mg/m³, 150 ppm

100-41-4 ethylbenzene

WEL Short-term value: 552 mg/m³, 125 ppm
Long-term value: 441 mg/m³, 100 ppm

- Additional information:
The lists valid during the making were used as basis.
Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used.
Examination of lung function should be carried out on a regular basis on persons spraying this preparation.
- Personal protective equipment:
- General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.

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Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Fluorelastomer gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**Value for the permeation: Level \geq 480 min for isocyanate

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· **General Information**

Form:	Liquid
Colour:	Transparent
Odour:	Characteristic

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 126°C

· Flash point: 28°C

· Ignition temperature: 280°C

· Self-igniting: Product is not selfigniting.

· Danger of explosion: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Explosion limits:**

Lower: 0.7 Vol %

Upper: 10.8 Vol %

· Vapour pressure at 20°C: 6.7 hPa

· Density at 20°C: 1 g/cm³

· Solubility in / Miscibility with water: Not miscible or difficult to mix.

· **Solvent content:**

Organic solvents: 60.0 %

VOC (EC) 60.00 %

· Solids content: 40.0 %

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.· **Dangerous reactions** No dangerous reactions known.· **Dangerous decomposition products:** No dangerous decomposition products known.

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11 Toxicological information

- . Acute toxicity:
- . LD/LC50 values relevant for classification:
 - 112-07-2 2-butoxyethyl acetate**
 - Oral LD50 2400 mg/kg (rat)
 - Dermal LD50 1580 mg/kg (rabbit)
 - 1330-20-7 xylene**
 - Oral LD50 4300 mg/kg (rat)
 - Dermal LD50 2000 mg/kg (rabbit)
 - 64742-95-6 Solvent naphtha (petroleum), light arom.**
 - Oral LD50 >6800 mg/kg (rat)
 - Dermal LD50 >3400 mg/kg (rab)
 - Inhalative LC50/4 h >10.2 mg/l (rat)
- . Primary irritant effect:
 - . on the skin: No irritant effect.
 - . on the eye: No irritating effect.
- . Sensitization: Sensitization possible through skin contact.
- . Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

 - Harmful
 - Irritant
- . Sensitisation May cause sensitisation by skin contact.

12 Ecological information

- . Ecotoxicological effects:
- . Remark: Harmful to fish
- . General notes:
 - Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
 - Do not allow product to reach ground water, water course or sewage system.
 - Danger to drinking water if even small quantities leak into the ground.
 - Harmful to aquatic organisms

13 Disposal considerations

- . Product:
- . Recommendation Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- . European waste catalogue
 - 08 01 11 waste paint and varnish containing organic solvents or other dangerous substances
- . Uncleaned packaging:
 - . Recommendation: Disposal must be made according to official regulations.

14 Transport information

- . Land transport ADR/RID (cross-border)



- . ADR/RID class: 3 Flammable liquids.
- . Danger code (Kemler): 30
- . UN-Number: 1263
- . Packaging group: III
- . Hazard label: 3
- . Description of goods: 1263 PAINT RELATED MATERIAL

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· Maritime transport IMDG:



- IMDG Class: 3
- UN Number: 1263
- Label: 3
- Packaging group: III
- EMS Number: F-E,S-E
- Marine pollutant: Yes
- Proper shipping name: PAINT RELATED MATERIAL

· Air transport ICAO-TI and IATA-DGR:



- ICAO/IATA Class: 3
- UN/ID Number: 1263
- Label: 3
- Packaging group: III
- Proper shipping name: PAINT RELATED MATERIAL
- UN "Model Regulation": UN1263, PAINT RELATED MATERIAL, 3, III
- Environmental hazards: Marine pollutant

15 Regulatory information

· Labelling according to EU guidelines:

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· Code letter and hazard designation of product:



Xn Harmful

· Hazard-determining components of labelling:

Hexane, 1,6-diisocyanato-, homopolymer
 Solvent naphtha (petroleum), light arom.
 Isophorondiisocyanat, homopolymeer

· Risk phrases:

- 10 Flammable.
- 20/21 Harmful by inhalation and in contact with skin.
- 43 May cause sensitisation by skin contact.
- 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- 65 Harmful: may cause lung damage if swallowed.

· Safety phrases:

- 23 Do not breathe fumes/aerosol.
- 36/37 Wear suitable protective clothing and gloves.
- 60 This material and its container must be disposed of as hazardous waste.
- 62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

· Special labelling of certain preparations:

Contains isocyanates. See information supplied by the manufacturer
 Restricted to professional users.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant R-phrases

- 10 Flammable.
- 11 Highly flammable.
- 20 Harmful by inhalation.

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- 20/21 Harmful by inhalation and in contact with skin.
- 36 Irritating to eyes.
- 37 Irritating to respiratory system.
- 38 Irritating to skin.
- 43 May cause sensitisation by skin contact.
- 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- 65 Harmful: may cause lung damage if swallowed.
- 66 Repeated exposure may cause skin dryness or cracking.
- 67 Vapours may cause drowsiness and dizziness.

· Department issuing MSDS: Product safety department.

· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement internationale concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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