

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

- Product details
- Trade name: **MS Hardener 81 Fast**
- Article number: 8111
- 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
F Highly flammable

- 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 11 Highly flammable.
 R 20/21 Harmful by inhalation and in contact with skin.
 R 38 Irritating to skin.
 R 43 May cause sensitisation by skin contact.
 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

2.6/2 - Highly flammable liquid and vapour.



Warning

3.1/4 - Harmful in contact with skin.
 3.1/4 - Harmful if inhaled.
 3.2/2 - Causes skin irritation.
 3.4/1 - May cause an allergic skin reaction.

- 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.
 Wash thoroughly after handling.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing should not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.

- Response:

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.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 Specific treatment (see label).
 Specific measures (see label).
 If skin irritation occurs: Get medical advice/attention.
 If skin irritation or rash occurs: Get medical advice/attention.
 Take off contaminated clothing and wash before reuse.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.

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- **Storage:**
Store in a well-ventilated place. Keep cool.
- **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: 123-86-4 EINECS: 204-658-1	n-butyl acetate R 10-66-67 Warning: 2.6/3; 3.8/3	25-50%
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: 53880-05-0	Isophorondiisocyanat, homopolymeer Xi; R 43 Warning: 3.4.S/1	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: 141-78-6 EINECS: 205-500-4	ethyl acetate Xi, F; R 11-36-66-67 Danger: 2.6/2 Warning: 3.3/2A, 3.8/3	2.5-10%
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	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
- **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:** 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.

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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: Store in a cool location.
 - 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.
 - Store in cool, dry conditions in well sealed receptacles.

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:
 - 123-86-4 n-butyl acetate**
 - WEL Short-term value: 966 mg/m³, 200 ppm
 - Long-term value: 724 mg/m³, 150 ppm
 - 1330-20-7 xylene**
 - WEL Short-term value: 441 mg/m³, 100 ppm
 - Long-term value: 220 mg/m³, 50 ppm
 - Sk; BMGV
 - 100-41-4 ethylbenzene**
 - WEL Short-term value: 552 mg/m³, 125 ppm
 - Long-term value: 441 mg/m³, 100 ppm
 - 141-78-6 ethyl acetate**
 - WEL Short-term value: 400 ppm
 - Long-term value: 200 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.
 - Do not inhale gases / fumes / aerosols.
 - Avoid contact with the skin.
 - 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

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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 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: 6°C

- Ignition temperature: 370°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: 1.1 Vol %

Upper: 7.5 Vol %

- Vapour pressure at 20°C: 10.7 hPa

- Density at 20°C: 0.97 g/cm³

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

- **Solvent content:**

Organic solvents: 60.3 %

VOC (EC) 60.34 %

- Solids content: 39.7 %

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.

11 Toxicological information

- **Acute toxicity:**

- LD/LC50 values relevant for classification:

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: Irritant to skin and mucous membranes.

- on the eye: No irritating effect.

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- **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

- **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.

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): 33
- UN-Number: 1263
- Packaging group: II
- Hazard label: 3
- Description of goods: 1263 PAINT RELATED MATERIAL

- Maritime transport IMDG:



- IMDG Class: 3
- UN Number: 1263
- Label: 3
- Packaging group: II
- EMS Number: F-E,S-E
- Marine pollutant: No
- 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: II
- Proper shipping name: PAINT RELATED MATERIAL
- UN "Model Regulation": UN1263, PAINT RELATED MATERIAL, 3, II

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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
F Highly flammable

- Hazard-determining components of labelling:

Hexane, 1,6-diisocyanato-, homopolymer
Isophorondiisocyanat, homopolymeer
xylene

- Risk phrases:

11 Highly flammable.
20/21 Harmful by inhalation and in contact with skin.
38 Irritating to skin.
43 May cause sensitisation by skin contact.

- Safety phrases:

16 Keep away from sources of ignition - No smoking.
23 Do not breathe fumes/aerosol.
33 Take precautionary measures against static discharges.
36/37 Wear suitable protective clothing and gloves.
60 This material and its container must be disposed of as hazardous waste.

- 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.
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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