

Safety Data Sheet according to GB/T 16483-2008 and GB/T 17519-2013 - China

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

1.1 Product identifier

Product name : HEMPEL'S CURING AGENT 98XCN

Product identity : 98XCN00000

Product type : Curing agent

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

Field of application : metal industry

Ready-for-use mixture : (see base component)

Identified uses : Industrial applications, Professional applications, Used by spraying.

1.3 Details of the supplier of the safety data sheet

Company details : **HEMPEL (CHINA) LTD.**
16th Floor, Millennium City 3,
370 Kwun Tong Road, Kwun Tong,
Kowloon, Hong Kong
Tel: +852 2857 7663
Fax: +852 2517 6311
hempel@hempel.com

1.4 Emergency telephone number

+86 400-6267-911

Manufacturer : **HEMPEL (KUNSHAN) COATINGS LTD.**
No.1 Haihong Road, Zhangpu, Kunshan, Jiangsu, China
Postal Code: 215321
Tel: +86 512 57440886 Fax: +86 512 57440389
HEMPEL (YANTAI) COATINGS LTD.
No.12 Zhujiang Road, Economic & Tech.
Development Zone, Yantai, Shandong, China
Postal Code: 264006
Tel: 86 535 6936699 Fax: +86 535 6936688
HEMPEL (GUANGZHOU) COATINGS LTD.
Canghai Si Road No.3, Yonghe District, Guangzhou
Economic Technology Development
District, Guangdong, China
Postal Code: 511356
Tel: +86 20 32812888 Fax: +86 20 32226478

Date of issue : 1 September 2018

Date of previous issue : 8 June 2018.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Emergency overview

☒ May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Harmful to aquatic life with long lasting effects.

GHS Classification

RESPIRATORY SENSITIZATION - Category 1

SKIN SENSITIZATION - Category 1

AQUATIC HAZARD (ACUTE) - Category 3

AQUATIC HAZARD (LONG-TERM) - Category 3

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



SECTION 2: Hazards identification

Signal word :	Danger
Hazard statements :	H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317 - May cause an allergic skin reaction. H412 - Harmful to aquatic life with long lasting effects.
Precautionary statements :	
Prevention :	P Wear protective gloves. In case of inadequate ventilation wear respiratory protection. Avoid release to the environment. Avoid breathing vapor. Contaminated work clothing should not be allowed out of the workplace.
Response :	R IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical attention.
Disposal :	D Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazardous ingredients :	prepolymer isocyanate HDI cyclohexyldimethylamine hexamethylene-di-isocyanate

2.3 Other hazards

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Product/ingredient name	Identifiers	%	GHS Classification
prepolymer isocyanate HDI cyclohexyldimethylamine	28182-81-2 98-94-2	≥90 ≤0.3	SKIN SENSITIZATION - Category 1 FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 2 SKIN CORROSION/IRRITATION - Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 1
hexamethylene-di-isocyanate	822-06-0	≤0.3	ACUTE TOXICITY (inhalation) - Category 3 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

General :	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Eye contact :	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. In all cases of doubt, or when symptoms persist, seek medical attention.
Inhalation :	Remove to fresh air. Keep person warm and at rest. If unconscious, place in recovery position and seek medical advice.
Skin contact :	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.
Ingestion :	If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat.

SECTION 4: First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : May cause an allergic skin reaction.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following:
irritation
redness
Ingestion : No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : If gasses have been inhaled, from the decomposition of the product, symptoms may be delayed. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Extinguishing media : Recommended: alcohol resistant foam, CO₂, powders, water spray.
Not to be used: waterjet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products : Decomposition products may include the following materials: carbon oxides nitrogen oxides

5.3 Advice for firefighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training.

6.2 Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Contaminated absorbent material may pose the same hazard as the spilled product.

SECTION 6: Accidental release measures

Prevention of secondary hazards:

Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Put on appropriate personal protective equipment.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Contains isocyanates. Exposure to isocyanate may result in acute irritation and/or sensitisation when breathing.

Care should be taken when re-opening partly-used containers.

Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations for flammable liquids. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids as well as of amines, alcohols and water. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Product/ingredient name	Exposure limit values
hexamethylene-di-isocyanate	GBZ 2.1 (China, 4/2007). PC-TWA: 0.03 mg/m ³ 8 hours.

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

Appropriate engineering controls

Arrange sufficient ventilation by local exhaust ventilation and good general ventilation to keep the airborne concentrations of vapors or dust lowest possible and below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Individual protection measures

General :

Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. Safety eyewear should be used when there is a likelihood of exposure.



Hygiene measures :

Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

SECTION 8: Exposure controls/personal protection

Eye/face protection :	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
Hand protection :	<p>Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances.</p> <p>Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type.</p>
Body protection :	<p>Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product.</p> <p>Wear suitable protective clothing. Always wear protective clothing when spraying.</p>
Respiratory protection :	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Dry sanding, flame cutting and/or welding of the dry paint film will give rise to dust and/or hazardous fumes. Wet sanding/flatting should be used wherever possible. If exposure cannot be avoided by the provision of local exhaust ventilation, suitable respiratory protective equipment should be used. Wear appropriate respirator when ventilation is inadequate. Be sure to use approved/certified respirator or equivalent. It is not possible to specify precise filter type, since the actual work situation is unknown. Supplier of respirators should be contacted in order to find the appropriate filter.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state :	Liquid.
Odor :	isocyanate
pH :	Testing not relevant or not possible due to nature of the product.
Melting point/freezing point :	-39.85°C This is based on data for the following ingredient: prepolymer isocyanate HDI
Boiling point/boiling range :	Testing not relevant or not possible due to nature of the product.
Flash point :	Closed cup: 158°C (316.4°F)
Evaporation rate :	Testing not relevant or not possible due to nature of the product.
Flammability :	Not available.
Lower and upper explosive (flammable) limits :	No specific data.
Vapor pressure :	0 kPa This is based on data for the following ingredient: prepolymer isocyanate HDI
Vapor density :	Testing not relevant or not possible due to nature of the product.
Specific gravity :	1.16 g/cm ³
Solubility(ies) :	
Partition coefficient (LogKow) :	Testing not relevant or not possible due to nature of the product.
Auto-ignition temperature :	Testing not relevant or not possible due to nature of the product.
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	Testing not relevant or not possible due to nature of the product.
Explosive properties :	Testing not relevant or not possible due to nature of the product.
Oxidizing properties :	Testing not relevant or not possible due to nature of the product.

9.2 Other information

Solvent(s) % by weight :	Weighted average: 0 %
Water % by weight :	Weighted average: 0 %
VOC content :	3.5 g/l
VOC content - Hong Kong :	3.5 g/l
TOC Content :	Weighted average: 0 g/l
Solvent Gas :	Weighted average: 0.001 m ³ /l

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

No specific data.

10.5 Incompatible materials

10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides nitrogen oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Isocyanate containing products have characteristics that include producing acute irritation and/or sensitisation when breathing, subsequent asthmatic problems and lung contractions. Sensitised people can, as a result from this, show asthmatic symptoms with exposure to atmospheric concentrations far below the TLV. Repeated exposures will lead to permanent damage to the respiratory system.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
prepolymer isocyanate HDI	LD50 Oral	Mouse	350 mg/kg	-
hexamethylene-di-isocyanate	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	124 mg/m ³	4 hours
	LC50 Inhalation Vapor	Rat	0.124 mg/l	4 hours
	LD50 Dermal	Rabbit	>7000 mg/kg	-
	LD50 Oral	Rat	746 mg/kg	-

Acute toxicity estimates

Route	ATE value
Inhalation (vapors)	62.31 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
prepolymer isocyanate HDI	Skin - Mild irritant	Rabbit	-	-
	Eyes - Mild irritant	Rabbit	-	-
	Respiratory - Mild irritant	Rabbit	-	-
hexamethylene-di-isocyanate	Skin - Severe irritant	Rabbit	-	-
	Eyes - Severe irritant	Rabbit	-	-
	Respiratory - Severe irritant	Rabbit	-	-

Sensitizer

Product/ingredient name	Route of exposure	Species	Result
prepolymer isocyanate HDI	skin	Guinea pig	Sensitizing
hexamethylene-di-isocyanate	skin	Guinea pig	Sensitizing

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

Sensitization : Contains prepolymer isocyanate HDI, hexamethylene-di-isocyanate. May produce an allergic reaction.

Other information : No additional known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses.

Product/ingredient name	Result	Species	Exposure
prepolymer isocyanate HDI	Acute IC50 >100 mg/l	Algae	72 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
prepolymer isocyanate HDI	-	1 % - Not readily - 28 days	-	-
hexamethylene-di-isocyanate	-	42 % - Not readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
prepolymer isocyanate HDI	-	-	Not readily
hexamethylene-di-isocyanate	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
prepolymer isocyanate HDI	5.54	367.7	low
hexamethylene-di-isocyanate	0.02	57.63	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : No known data available in our database.

Mobility : No known data available in our database.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Packaging

The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

Transport may take place according to national regulation or ADR for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

	14.1 UN no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env* Additional information
UN Class	Not regulated.		-	-	No. -
IMDG Class	Not regulated.		-	-	No. -
IATA Class	Not regulated.		-	-	No. -

PG* : Packing group

Env.* : Environmental hazards

SECTION 14: Transport information

14.6 Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.


SECTION 15: Regulatory information

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

List of Goods banned for Importing

None of the components are listed.

Inventory of Hazardous Chemicals

 cyclohexyldimethylamine
hexamethylene-di-isocyanate

List of Goods banned for Exporting

None of the components are listed.

List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

Inventory of Highly Toxic Chemicals

None of the components are listed.

Catalogue of Hazardous Chemicals of Priority Management

None of the components are listed.

Catalogue of Priority Hazardous Chemicals for Environmental Management

None of the components are listed.

SECTION 16: Other information

Abbreviations and acronyms :

ATE = Acute Toxicity Estimate
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
DNEL = Derived No Effect Level
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG = International Maritime Dangerous Goods
IATA = International Air Transport Association
CAS = Chemical Abstracts Service
LC50 = Median lethal concentration
EC50 = Half maximal effective concentration
LD50 = Median lethal dose

GHS Classification

Classification	Justification
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
AQUATIC HAZARD (ACUTE) - Category 3	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method

Notice to reader

 Indicates information that has changed from previously issued version.

The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical performance or suitability for particular applications.

It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.