

1 Identification

· **Product identifier**

· **Trade name:** **HERCULAN SR 320 { B }**

· **Article number:** 908500/16

· **Application of the substance / the mixture** Coating compound/ Surface coating/ paint

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

HERCULAN B.V.
Energieweg 6
4231 DJ Meerkerk
The Netherlands
Phone +31 183 354700
Fax: +31 183 354740
e-mail: info@herculan.com

· **Information department:** -
· **Emergency telephone number:** -

Enviromental department

+49 (0) 6131 19240 [24 h - 365 d] - Giftinformationszentrale Mainz
or
+31 (0) 183 354 700 [Mo - Fr. 8 - 17 o'clock] - HERCULAN

2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Carc. 2 H351 Suspected of causing cancer.
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

· **Label elements**

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms** GHS07, GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:** 4,4'-Methylenediphenyldiisocyanate, oligomeric reaction products with butane-1, 3-diol, 2,4'-diisocyanatodiphenylmethane, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer, [(methylethylene)bis(oxy)]dipropanol and propane-1,2-diol diphenylmethane-4,4'-diisocyanate

· **Hazard statements**

H332 Harmful if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P284 [In case of inadequate ventilation] wear respiratory protection.
P280 Wear protective gloves.
P280 Wear eye protection / face protection.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.

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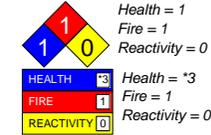
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P272 Contaminated work clothing must not be allowed out of the workplace.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/doctor if you feel unwell.
P321 Specific treatment (see on this label).
P363 Wash contaminated clothing before reuse.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of water.
P362+P364 Take off contaminated clothing and wash it before reuse.
P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** There are no additional ingredients present which are classified as hazardous to health or the environment and on this basis need to be mentioned in this section.

· **Dangerous components:**

	4,4'-Methylenediphenyldiisocyanate, oligomeric reaction products with butane-1, 3-diol, 2,4'-diisocyanatodiphenylmethane, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer, [(methylethylene)bis(oxy)]dipropanol and propane-1,2-diol	50 - 100%
	⚠ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	
101-68-8	diphenylmethane-4,4'-diisocyanate	25 - 100%
	⚠ Resp. Sens. 1, H334; Carc. 2, H351; STOT RE 2, H373; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	

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

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

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.
Immediately rinse with water.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

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- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**


CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**

Mount respiratory protective device.
Do not inhale explosion gases or combustion gases.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.
- **Environmental precautions:**

Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections**

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**

No special measures required.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**

Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **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 frost.
Keep receptacle tightly sealed.
Store in dry conditions.
Store in a cool place.
- **Specific end use(s)**

No further relevant information available.

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8 Exposure controls/personal protection

- **Additional information about design of technical systems:**

No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

101-68-8 diphenylmethane-4,4'-diisocyanate

PEL	Ceiling limit value: 0.2 mg/m ³ , 0.02 ppm
REL	Long-term value: 0.05 mg/m ³ , 0.005 ppm Ceiling limit value: 0.2* mg/m ³ , 0.02* ppm *10-min
TLV	Long-term value: 0.051 mg/m ³ , 0.005 ppm

- **Additional information:**

The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **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.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Do not eat, drink, smoke or sniff while working.
- **Breathing equipment:**


Only during spraying without adequate removal by suction.
Use suitable respiratory protective device in case of insufficient ventilation.
Use suitable respiratory protective device when high concentrations are present.
- **Recommended filter device for short term use:**

Combination filter A-P2
- **Protection of hands:**


Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- **Material of 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**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
- **As protection from splashes gloves made of the following materials are suitable:**

Nitrile rubber, NBR
Natural rubber, NR
- **Eye protection:**


Tightly sealed goggles
- **Body protection:**


Protective work clothing

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9 Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance:

Form:	Fluid
Color:	According to product specification
Odor:	Characteristic
Odor threshold:	Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	>300 °C (>572 °F)

Flash point: 235 °C (455 °F)

Flammability (solid, gaseous): Not applicable.

Ignition temperature: 520 °C (968 °F)

Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower:	0.4 Vol %
Upper:	0.0 Vol %

Vapor pressure: Not determined.

Density at 20 °C (68 °F): 1.2 g/cm³ (10.014 lbs/gal)

Relative density: Not determined.

Vapor density: Not determined.

Evaporation rate: Not determined.

Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

Partition coefficient (n-octanol/water): Not determined.

Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

Solvent content:

Organic solvents:	0.0 %
Water:	0.0 %

Solids content: 62.7 %

Other information: No further relevant information available.

10 Stability and reactivity

Reactivity: No further relevant information available.

Chemical stability

Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

Possibility of hazardous reactions

No dangerous reactions known.

Conditions to avoid

No further relevant information available.

Incompatible materials:

No further relevant information available.

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Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects
Acute toxicity:
LD/LC50 values that are relevant for classification:

4,4'-Methylenediphenyldiisocyanate, oligomeric reaction products with butane-1, 3-diol, 2,4'-diisocyanatodiphenylmethane, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer, [(methylethylene)bis(oxy)]dipropanol and propane-1,2-diol

Oral	LD50	> 5000 mg/kg (rat)
Dermal	LD50	> 9400 mg/kg (rabbit)
Inhalative	LC50/4 h	0.49 mg/l (rat)
	OECD 453	negativ (rat) (2 years - 5 days per week)
	without guidelines	sensitizing (Guinea pig)
Irritation of skin	OECD 404	irriterend (rabbit)
	OECD 406	sensibiliserend (huit)
Irritation of eyes	OECD 405	niet irriterend (rabbit)
	OECD 474	negativ
	STOT repeated	Categorie 2

101-68-8 diphenylmethane-4,4'-diisocyanate

Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>9400 mg/kg (rabbit)
Inhalative	LC50/4 h	0.31 mg/l (rat)
	LC50/1 h	2.24 mg/l (rat)
	OECD 453	positive (rat) (2 years - 5 days per week)
	without guidelines	Sensitising (Guinea pig)
Irritation of skin	OECD 406	Not sensitising (Guinea pig)
	OECD 474	- (Mammalian Erythrocyte Micronucleus Test)

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: Sensitization possible through inhalation.

Sensitization possible through skin contact.

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

Carcinogenic categories
IARC (International Agency for Research on Cancer)

101-68-8 diphenylmethane-4,4'-diisocyanate	3
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NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

Toxicity
Aquatic toxicity:

4,4'-Methylenediphenyldiisocyanate, oligomeric reaction products with butane-1, 3-diol, 2,4'-diisocyanatodiphenylmethane, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer, [(methylethylene)bis(oxy)]dipropanol and propane-1,2-diol

LogPow	200 BCF
OECD 201 (static)	> 1640 mg/l (algae) (EC50)

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OECD 202 (static)	>1000 mg/l (daphnia) (EC50)
OECD 203 (static)	>1000 mg/l (fish) (LC50)
OECD 209 (static)	>100 mg/l (Bacterie) (EC50)
OECD 211 (static)	≥ 10 mg/l (daphnia) (NOEC)
OECD 302 C	0 %
OECD 471	negativ

101-68-8 diphenylmethane-4,4'-diisocyanate

LogPow	200 BCF
OECD 202	> 1000 mg/l (daphnia)
OECD 203	> 1000 mg/l (fish)
OECD 209	> 100 mg/l (Bacterie)
OECD 211	> 10 mg/l (Daphnia Magna)
OECD 302 C	0 % (Modified MITI Test (II))

· Persistence and degradability	No further relevant information available.
· Behavior in environmental systems:	
· Bioaccumulative potential	No further relevant information available.
· Mobility in soil	No further relevant information available.
· Additional ecological information:	
· General notes:	Water hazard class 1 (Self-assessment): slightly hazardous for water Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· Results of PBT and vPvB assessment	
· PBT:	Not applicable.
· vPvB:	Not applicable.
· Other adverse effects	No further relevant information available.

13 Disposal considerations

· Waste treatment methods	
· Recommendation:	Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
· Uncleaned packagings:	
· Recommendation:	Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.

14 Transport information

· UN-Number	
· DOT, ADR, ADN, IMDG, IATA	Void
· UN proper shipping name	
· DOT, ADR, ADN, IMDG, IATA	Void
· Transport hazard class(es)	
· DOT, ADR, ADN, IMDG, IATA	
· Class	Void
· Packing group	
· DOT, ADR, IMDG, IATA	Void
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

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· **UN "Model Regulation":** Void**15 Regulatory information**

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

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredient is listed.

· **Section 313 (Specific toxic chemical listings):**

101-68-8 | diphenylmethane-4,4'-diisocyanate

· **TSCA (Toxic Substances Control Act):**

101-68-8 | diphenylmethane-4,4'-diisocyanate

· **Proposition 65**· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogeny categories**· **EPA (Environmental Protection Agency)**

101-68-8 | diphenylmethane-4,4'-diisocyanate

D, CBD

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**

101-68-8 | diphenylmethane-4,4'-diisocyanate

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· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements**· **Hazard pictograms**· **Signal word**

The product is classified and labeled according to the Globally Harmonized System (GHS).

GHS07, GHS08

Danger

· **Hazard-determining components of labeling:**

4,4'-Methylenediphenyldiisocyanate, oligomeric reaction products with butane-1, 3-diol, 2,4'-diisocyanatodiphenylmethane, 1,1'-methylenebis(4-isocyanatobenzene) homopolymer, [(methylethylene)bis(oxy)]dipropanol and propane-1,2-diol diphenylmethane-4,4'-diisocyanate

· **Hazard statements**H332 Harmful if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.· **Precautionary statements**P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P284 [In case of inadequate ventilation] wear respiratory protection.
P280 Wear protective gloves.
P280 Wear eye protection / face protection.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P201 Obtain special instructions before use.

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P202 Do not handle until all safety precautions have been read and understood.
 P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P312 Call a POISON CENTER/doctor if you feel unwell.
 P321 Specific treatment (see on this label).
 P363 Wash contaminated clothing before reuse.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P314 Get medical advice/attention if you feel unwell.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P362+P364 Take off contaminated clothing and wash it before reuse.
 P405 Store locked up.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
I	34,1

· **Water hazard class:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.

· **Other regulations, limitations and prohibitive regulations**

No sales to private

· **VOC**

· **VOC EU [%]**

0,00 %

· **VOC USA**

0,0 g/l / 0,00 lb/gl

· **VOC CH**

0,00 %

· **Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

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.

· **Department issuing SDS:**

Environmental Department

· **Contact:**

Dr. Michael Kissel

· **Date of preparation / last revision**

08/03/2016 / 15

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 ICAO: International Civil Aviation Organisation
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 ACGIH: American Conference of Governmental Industrial Hygienists
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 NIOSH: National Institute for Occupational Safety
 OSHA: Occupational Safety & Health
 TLV: Threshold Limit Value
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 Resp. Sens. 1: Respiratory sensitisation – Category 1
 Skin Sens. 1: Skin sensitisation – Category 1
 Carc. 2: Carcinogenicity – Category 2
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· *** Data compared to the previous version altered.**

US