

1 Identification

· Product identifier

- Product number HNB2
- Trade name: **Hardener for WB 2K**
- Relevant identified uses of the substance or mixture and uses advised against
A coating composition for water-based coating and / or decoration of wooden artefacts
- Application of the substance / the mixture For professional use

· Details of the supplier of the safety data sheet

- Manufacturer/Supplier:
IVM Chemicals srl
Viale della Stazione 3 - 27020 Parona (PV) Italy tel +39 038425441
- Information department:
Environmental Health and safety office
hseoffice@ivmchemicals.com
- Emergency telephone number:
ChemTel Expert Assistance Hotline/SDS Fax Access by dialing 1-800-255-3924 or for International +1-813-248-0585.

2 Hazard(s) identification

· Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· Label elements

· GHS label elements

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

· Hazard pictograms



GHS02



GHS05



GHS07

· Signal word Danger

- Hazard-determining components of labeling:
Homopolymers of HDI

Product number HNB2

Trade name: Hardener for WB 2K

(Contd. of page 1)

Poliossietilene tridecil etere fosfato
cyclohexyldimethylamine
n-butyl acetate

· Hazard statements

H225 Highly flammable liquid and vapor.
H312+H332 Harmful in contact with skin or if inhaled.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/doctor.
P405 Store locked up.
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)



3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description: Mixture: consisting of the following components.

· Dangerous components:

28182-81-2	Homopolymers of HDI ⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	50-74.9%
123-86-4	n-butyl acetate ⚠ Flam. Liq. 3, H226 ⚠ STOT SE 3, H336	15- <50%
108-65-6	2-methoxy-1-methylethyl acetate ⚠ Flam. Liq. 3, H226	12.5-15%

(Contd. on page 3)

Product number HNB2

Trade name: Hardener for WB 2K

(Contd. of page 2)

9046-01-9	Poliossietilene tridecil etere fosfato	5-9.99%
	<ul style="list-style-type: none"> ☠ Eye Dam. 1, H318 ☠ Aquatic Chronic 2, H411 ☠ Skin Irrit. 2, H315 ☠ Aquatic Acute 2, H401 	
98-94-2	cyclohexyldimethylamine	1-2.49%
	<ul style="list-style-type: none"> ☠ Flam. Liq. 3, H226 ☠ Acute Tox. 2, H310; Acute Tox. 3, H331 ☠ Skin Corr. 1B, H314; Eye Dam. 1, H318 ☠ Acute Tox. 4, H302 	
822-06-0	hexamethylene diisocyanate	0.1-<0.5%
	<ul style="list-style-type: none"> ☠ Acute Tox. 3, H331 ☠ Resp. Sens. 1, H334 ☠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335 	

4 First-aid measures

· Description of 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.

Take off immediately all contaminated clothing, include underwear and shoes (if necessary).

Rinse thoroughly with plenty of water for at least 20 minutes and take medical advise. If medical advise is needed have products container or label at hand.

· After eye contact:

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

· After swallowing: Do not induce vomiting; immediately call for medical help.

· Information for doctor:

· Most important symptoms and effects, both acute and delayed

For symptoms and effects caused by substances, refer to Section 11.

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

· Extinguishing media

· Suitable extinguishing agents: Alcohol resistant foam, CO, powder, water spray/mist.

· For safety reasons unsuitable extinguishing agents:

Do not use a jet water stream as it may scatter and spread fire.

· Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

· Advice for firefighters

Cool by spraying with water the containers to prevent product decomposition and the development of substances potentially hazardous for health and also, in the case of closed containers exposed to flames to prevent explosions.

(Contd. on page 4)

Printing date 09/18/2015

Version number 30

Reviewed on 09/18/2015

Product number HNB2

Trade name: Hardener for WB 2K

(Contd. of page 3)

· **Protective equipment:**

Hardhat with visor, fireproof clothing, suitable gloves and if necessary respiratory protective device.

6 Accidental release measures

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

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

· **Environmental precautions:**

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

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 Section 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

· **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**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Protect against electrostatic charges.

Use explosion-proof apparatus / fittings and spark-proof tools.

· **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:**

Provide solvent resistant, sealed floor.

Observe the label precautions, the expiration date for the use, if not indicated, is from delivery date of goods.

In cases where there is no reported expiration date, it means that the product must be used within 8 months.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:** Keep receptacle tightly sealed.

· **Specific end use(s)** Those typical of the product and the instructions in the data sheet if required.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

(Contd. on page 5)

Product number HNB2

Trade name: Hardener for WB 2K

(Contd. of page 4)

· **Control parameters**

· *Components with limit values that require monitoring at the workplace:*

123-86-4 n-butyl acetate

PEL	Long-term value: 710 mg/m , 150 ppm
REL	Short-term value: 950 mg/m , 200 ppm Long-term value: 710 mg/m , 150 ppm
TLV	Short-term value: (950) NIC-712 mg/m , (200) NIC-150 ppm Long-term value: (713) NIC-238 mg/m , (150) NIC-50 ppm

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

WEEL	Long-term value: 50 ppm
------	-------------------------

822-06-0 hexamethylene diisocyanate

REL	Long-term value: 0.035 mg/m , 0.005 ppm Ceiling limit value: 0.14* mg/m , 0.02* ppm *10-min
TLV	Long-term value: 0.034 mg/m , 0.005 ppm BEI

· *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.
Avoid contact with the eyes and skin.

· *Breathing equipment:*

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· *Protection of hands:*



Protective gloves

Due to missing tests no recommendation to the glove material can be given for the product.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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

· *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.

(Contd. on page 6)

Product number HNB2
Trade name: Hardener for WB 2K

(Contd. of page 5)

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

· Form:

Fluid

· Color:

According to product specification

· Odor:

Characteristic

· Odour threshold:

Not determined.

· pH-value:

Not determined.

· Change in condition

· Melting point/Melting range:

Undetermined.

· Boiling point/Boiling range:

100 °C (212 °F)

· Flash point:

22 °C (72 °F)

· Flammability (solid, gaseous):

Not applicable.

· Ignition temperature:

200 °C (392 °F)

· Decomposition temperature:

Not determined.

· Auto igniting:

Product is not selfigniting.

· Danger of explosion:

Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· Explosion limits:

· Lower:

0.8 Vol %

· Upper:

10.8 Vol %

· Vapor pressure at 20 °C (68 °F):

10.7 hPa (8 mm Hg)

· Density at 20 °C (68 °F):

1.058 g/cm (8.829 lbs/gal)

· Relative density

Not determined.

· Vapour 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 at 20 °C (68 °F):

29 s (ISO 3 mm)

· Oxidising properties:

N.A.

· Solvent content:

· VOC content:

31.5 %

333.0 g/l / 2.78 lb/gl

· Solids content:

68.5 %

(Contd. on page 7)

Product number HNB2
Trade name: Hardener for WB 2K

(Contd. of page 6)

· **Other information (HAPS)**

822-06-0	hexamethylene diisocyanate	0.1-<0.5%
----------	----------------------------	-----------

· **Other information**

No further relevant information available.

10 Stability and reactivity

- **Reactivity** typical of the product as indicated in the data sheet
- **Chemical stability** The product is stable in normal conditions of storage and use recommended
- **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.
- **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:**

28182-81-2 Homopolymers of HDI

Oral	LD50	2501 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Dermal	LD50	2001 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)

123-86-4 n-butyl acetate

Oral	LD50	10760 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Dermal	LD50	14000 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)
Inhalative	LC50/4 h	21.1 mg/l (rat/szczur/mouse/souris/Maus/ratón)

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

Oral	LD50	8532 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Dermal	LD50	5001 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)
Inhalative	LC50/4 h	35.7 mg/l (rat/szczur/mouse/souris/Maus/ratón)

98-94-2 cyclohexyldimethylamine

Oral	LD50	348 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Inhalative	LC50/4 h	4.45 mg/l (rat/szczur/mouse/souris/Maus/ratón)

822-06-0 hexamethylene diisocyanate

Oral	LD50	738 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Dermal	LD50	593 mg/kg (rat/szczur/mouse/souris/Maus/ratón)

· **Primary irritant effect:**

· **on the skin:**

Irritant to skin and mucous membranes.
Causes skin irritation.

· **on the eye:**

Strong caustic effect.
Strong irritant with the danger of severe eye injury.
Irritating effect.
Causes serious eye irritation.

(Contd. on page 8)

Product number HNB2

Trade name: Hardener for WB 2K

(Contd. of page 7)

· **Sensitization:**

Sensitization possible through skin contact.

May cause an allergic skin reaction.

· **Additional toxicological information:**

Harmful

Irritant

May cause respiratory irritation.

Harmful if inhaled.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Sensitisation**

Hexamethylene-1,6-diisocyanate

Skin sensitization according to Magnusson / Klingmann (maximization test): guinea pig positive Result

Method OECD TG 406

Respiratory sensitization guinea pig

May cause sensitization by inhalation

· **More information**

Monomers / polymers isocyanate

Particular characteristics / effects; prolonged exposure may irritate the eyes, nose, throat and respiratory tract.

Isocyanate exposure may result in the delayed appearance of respiratory disorders, cough or asthma. Sensitive individuals may show exposure symptoms to isocyanates below workplace TLV values. Prolonged skin contact may result cause irritation and dehydration.

12 Ecological information

· **Toxicity** Harmful to aquatic life with long lasting effects.

· **Aquatic toxicity:**

28182-81-2 Homopolymers of HDI

EC50 1001 mg/l (algae) (48 h)

127 mg/l (daphnia) (48 h)

123-86-4 n-butyl acetate

EC50 648 mg/l (algae) (72 h)

44 mg/l (daphnia) (48 h)

LC50 (96h) 18 mg/l (Fish)

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

EC50 1001 mg/l (algae) (72 h)

501 mg/l (daphnia) (48 h)

LC50 (96h) 134 mg/l (Fish)

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

(Contd. on page 9)

Product number HNB2

Trade name: Hardener for WB 2K



(Contd. of page 8)

- *Mobility in soil* No further relevant information available.
- **Ecotoxicological effects:**
 - *Remark:* Harmful to fish
- **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.
 - Harmful to aquatic organisms
- **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.
 - Hand over to hazardous waste disposers.
 - Dispose of contents and container in accordance with local state and federal regulations.
- **Uncleaned packagings:**
 - *Recommendation:* Disposal must be made according to official regulations.

14 Transport information

- | | |
|---|---------------------|
| · UN-Number | |
| · DOT | NA1263 |
| · IMDG, IATA | UN1263 |
| · UN proper shipping name | |
| · DOT | Paint |
| · IMDG, IATA | PAINT |
| · Transport hazard class(es) | |
| · DOT | |
|  | |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| · IMDG, IATA | |
|  | |
| · Class | 3 Flammable liquids |
| · Label | 3 |

(Contd. on page 10)

Safety Data Sheet

29 CFR Parts 1910 1915 1926

Printing date 09/18/2015

Version number 30

Reviewed on 09/18/2015

Product number HNB2**Trade name: Hardener for WB 2K**

(Contd. of page 9)

· Packing group	
· DOT, IMDG, IATA	II
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	33
· EMS Number:	F-E, S-E
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN1263, Paint, special provision 640D, 3, II

15 Regulatory information

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

Requirements of Federal Register

· SARA

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings) :

822-06-0	hexamethylene diisocyanate	0.1-<0.5%
----------	----------------------------	-----------

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

70657-70-4	2-methoxypropyl acetate	<0.1%
------------	-------------------------	-------

1589-47-5	2-methoxypropanol	<0.01%
-----------	-------------------	--------

· 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.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

(Contd. on page 11)

Safety Data Sheet

29 CFR Parts 1910 1915 1926

Printing date 09/18/2015

Version number 30

Reviewed on 09/18/2015

Product number HNB2**Trade name: Hardener for WB 2K**

(Contd. of page 10)

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

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

None of the ingredients is listed.

- **National regulations:**

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

- **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:** IVM Chemicals Srl

- **Contact:** See emergency phone

- **Date of preparation / last revision** 09/18/2015 / 29

- **Abbreviations and acronyms:**

- 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)

- VOC: Volatile Organic Compounds (USA, EU)

- LC50: Lethal concentration, 50 percent

- LD50: Lethal dose, 50 percent

- Flam. Liq. 2: Flammable liquids, Hazard Category 2

- Flam. Liq. 3: Flammable liquids, Hazard Category 3

- Acute Tox. 2: Acute toxicity, Hazard Category 2

- Acute Tox. 3: Acute toxicity, Hazard Category 3

- Acute Tox. 4: Acute toxicity, Hazard Category 4

- Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

- Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

- Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

- Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

- Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1

- Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

- STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

- Aquatic Acute 2: Hazardous to the aquatic environment - AcuteHazard, Category 2

- Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

- Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3

- **Sources**

- Directive 1999/45/EC and following amendments

- Directive 67/548/EEC and following amendments and adjustments

- Agency ECHA web site

- INRS Fiche Toxicologique

- IARC International agency for research on cancer

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