



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

1 Identification

- **Product identifier**
- **Trade name: H2232 2K HARDENER NORMAL**
- **Article number: H2232**
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
General Paint Co. S.A.L.
P.O. Box 7623
Beirut
LEBANON
info@generalpaint.biz
- **Information department: Product Safety Department**
- **Emergency telephone number: 1-800-535-5053 contract number (89244)**

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



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.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

- **Label elements**

- **GHS label elements**

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

(Contd. on page 2)



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 1)

· Hazard pictograms

GHS02 GHS07 GHS08

· Signal word *Danger***· Hazard-determining components of labeling:**

Homopolymer of hexamethylene diisocyanate
Isophorone Diisocyanate homopolymer
Solvent naphtha (petroleum), light arom.
n-butyl acetate

· Hazard statements

Flammable liquid and vapor.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Suspected of causing cancer.
May cause respiratory irritation. May cause drowsiness or dizziness.

· Precautionary statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
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/vapors/spray
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
[In case of inadequate ventilation] wear respiratory protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/attention.
Call a poison center/doctor if you feel unwell.
Specific treatment (see on this label).
Take off contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
If experiencing respiratory symptoms: Call a poison center/doctor.
In case of fire: Use for extinction: CO₂, powder or water spray.

(Contd. on page 3)

US



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 2)

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 3

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *2

Fire = 3

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

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

· **Dangerous components:**

28182-81-2	Homopolymer of hexamethylene diisocyanate	>25-≤50%
123-86-4	n-butyl acetate	>25-≤50%
53880-05-0	Isophorone Diisocyanate homopolymer	>10-≤25%
64742-95-6	Solvent naphtha (petroleum), light arom.	>2.5-≤10%
108-65-6	2-methoxy-1-methylethyl acetate	>2.5-≤10%
1330-20-7	xylene	>2.5-≤10%
100-41-4	ethylbenzene	≤2.5%

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.

(Contd. on page 4)

US



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 3)

- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
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. If symptoms persist, consult a doctor.
- **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.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **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.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

28182-81-2	Homopolymer of hexamethylene diisocyanate	7.8 mg/m ³
123-86-4	n-butyl acetate	5 ppm
108-65-6	2-methoxy-1-methylethyl acetate	50 ppm
1330-20-7	xylene	130 ppm

(Contd. on page 5)



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 4)

100-41-4	ethylbenzene	33 ppm
822-06-0	hexamethylene-di-isocyanate	0.018 ppm
4098-71-9	3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	0.02 ppm

· **PAC-2:**

28182-81-2	Homopolymer of hexamethylene diisocyanate	86 mg/m ³
123-86-4	n-butyl acetate	200 ppm
108-65-6	2-methoxy-1-methylethyl acetate	1,000 ppm
1330-20-7	xylene	920* ppm
100-41-4	ethylbenzene	1100* ppm
822-06-0	hexamethylene-di-isocyanate	0.2 ppm
4098-71-9	3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	0.14 ppm

· **PAC-3:**

28182-81-2	Homopolymer of hexamethylene diisocyanate	510 mg/m ³
123-86-4	n-butyl acetate	3000* ppm
108-65-6	2-methoxy-1-methylethyl acetate	5000* ppm
1330-20-7	xylene	2500* ppm
100-41-4	ethylbenzene	1800* ppm
822-06-0	hexamethylene-di-isocyanate	3 ppm
4098-71-9	3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	0.6 ppm

7 Handling and storage

· **Handling:**

· **Precautions for safe handling**

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 ignition sources away - Do not smoke.

Protect against electrostatic charges.

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:** Keep receptacle tightly sealed.

· **Storage class:** 3

· **Specific end use(s)** No further relevant information available.

US

(Contd. on page 6)



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 5)

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 constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

123-86-4 n-butyl acetate

PEL Long-term value: 710 mg/m³, 150 ppm

REL Short-term value: 950 mg/m³, 200 ppm
Long-term value: 710 mg/m³, 150 ppm

TLV Short-term value: 712 mg/m³, 150 ppm
Long-term value: 238 mg/m³, 50 ppm

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

WEEL Long-term value: 50 ppm

1330-20-7 xylene

PEL Long-term value: 435 mg/m³, 100 ppm

REL Short-term value: 655 mg/m³, 150 ppm
Long-term value: 435 mg/m³, 100 ppm

TLV Short-term value: 651 mg/m³, 150 ppm
Long-term value: 434 mg/m³, 100 ppm
BEI

100-41-4 ethylbenzene

PEL Long-term value: 435 mg/m³, 100 ppm

REL Short-term value: 545 mg/m³, 125 ppm
Long-term value: 435 mg/m³, 100 ppm

TLV Long-term value: 87 mg/m³, 20 ppm
BEI

· **Ingredients with biological limit values:**

1330-20-7 xylene

BEI 1.5 g/g creatinine

Medium: urine

Time: end of shift

Parameter: Methylhippuric acids

(Contd. on page 7)

US



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 6)

100-41-4 ethylbenzene

BEI	0.7 g/g creatinine Medium: urine Time: end of shift at end of workweek Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific, semi-quantitative)
-	Medium: end-exhaled air Time: not critical Parameter: Ethyl benzene (semi-quantitative)

- **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.
- **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

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

- **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 8)

US



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 7)

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:	Fluid
Color:	Clear
Odor:	Characteristic
Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	124 °C (255.2 °F)

· Flash point: 25 °C (77 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 370 °C (698 °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:	1.2 Vol %
Upper:	7.5 Vol %

· Vapor pressure at 20 °C (68 °F): 10.7 hPa (8 mm Hg)

· Density at 20 °C (68 °F): 1.02848 g/cm³ (8.58267 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.

(Contd. on page 9)

US



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 8)

- | | |
|------------------------------|--|
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Organic solvents: | 47.1 % |
| Coating VOC content: | 47.07 % |
| | 484.1 g/l / 4.04 lb/gal |
| Material VOC content: | 484.1 g/l / 4.04 lb/gal |
| Solids content: | 52.9 % |
| · 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.
- **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:**

64742-95-6 Solvent naphtha (petroleum), light arom.

Oral	LD50	>6,800 mg/kg (rat)
Dermal	LD50	>3,400 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:** Irritating effect.
- **Sensitization:** Sensitization possible through inhalation.
- **Additional toxicological information:**

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

Harmful
Irritant

(Contd. on page 10)

US



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 9)

- **Carcinogenic categories**

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

1330-20-7	xylene	3
100-41-4	ethylbenzene	2B

- **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:** No further relevant information available.

- **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 2 (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.

- **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:** Disposal must be made according to official regulations.

US

(Contd. on page 11)



Safety Data Sheet

acc. to OSHA HCS



Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 10)

14 Transport information

· UN-Number	
· DOT, ADR, IMDG, IATA	UN1263
· UN proper shipping name	
· DOT	Paint
· ADR	1263 PAINT
· IMDG, IATA	PAINT
· Transport hazard class(es)	
· DOT	
	
· Class	3 Flammable liquids
· Label	3
· ADR, IMDG, IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	
· DOT, ADR, IMDG, IATA	III
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	30
· EMS Number:	F-E, <u>S-E</u>
· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L

(Contd. on page 12)

US



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 11)

- | | |
|--|--|
| <ul style="list-style-type: none"> · ADR · Excepted quantities (EQ) | <p>Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml</p> |
| <ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) | <p>5L
Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml</p> |
| <ul style="list-style-type: none"> · UN "Model Regulation": | <p>UN 1263 PAINT, 3, III</p> |

15 Regulatory information

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

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

4098-71-9	3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate
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- **Section 313 (Specific toxic chemical listings):**

1330-20-7	xylene
100-41-4	ethylbenzene
822-06-0	hexamethylene-di-isocyanate
4098-71-9	3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate

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

28182-81-2	Homopolymer of hexamethylene diisocyanate	ACTIVE
123-86-4	n-butyl acetate	ACTIVE
53880-05-0	Isophorone Diisocyanate homopolymer	ACTIVE
108-65-6	2-methoxy-1-methylethyl acetate	ACTIVE
1330-20-7	xylene	ACTIVE
100-41-4	ethylbenzene	ACTIVE
822-06-0	hexamethylene-di-isocyanate	ACTIVE
4098-71-9	3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	ACTIVE

- **Hazardous Air Pollutants**

1330-20-7	xylene
100-41-4	ethylbenzene
822-06-0	hexamethylene-di-isocyanate

(Contd. on page 13)

US



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 12)

· **Proposition 65**

· **Chemicals known to cause cancer:**

100-41-4	ethylbenzene
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· **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.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

1330-20-7	xylene	I
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100-41-4	ethylbenzene	D
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· **TLV (Threshold Limit Value established by ACGIH)**

1330-20-7	xylene	A4
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100-41-4	ethylbenzene	A3
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· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **GHS label elements**

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

· **Hazard pictograms**



GHS02 GHS07 GHS08

· **Signal word** Danger

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

Homopolymer of hexamethylene diisocyanate

Isophorone Diisocyanate homopolymer

Solvent naphtha (petroleum), light arom.

n-butyl acetate

· **Hazard statements**

Flammable liquid and vapor.

Harmful if inhaled.

Causes skin irritation.

Causes serious eye irritation.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Suspected of causing cancer.

May cause respiratory irritation. May cause drowsiness or dizziness.

(Contd. on page 14)



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 13)

Precautionary statements

- Obtain special instructions before use.
 - Do not handle until all safety precautions have been read and understood.
 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 - 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/vapors/spray
 - Wash thoroughly after handling.
 - Use only outdoors or in a well-ventilated area.
 - Wear protective gloves/protective clothing/eye protection/face protection.
 - [In case of inadequate ventilation] wear respiratory protection.
 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - IF exposed or concerned: Get medical advice/attention.
 - Call a poison center/doctor if you feel unwell.
 - Specific treatment (see on this label).
 - Take off contaminated clothing and wash it before reuse.
 - If skin irritation occurs: Get medical advice/attention.
 - If eye irritation persists: Get medical advice/attention.
 - If experiencing respiratory symptoms: Call a poison center/doctor.
 - In case of fire: Use for extinction: CO₂, powder or water spray.
 - Store in a well-ventilated place. Keep container tightly closed.
 - Store in a well-ventilated place. Keep cool.
 - Store locked up.
 - Dispose of contents/container in accordance with local/regional/national/international regulations.
- **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:** Product safety department
- **Contact:** N/A
- **Date of preparation / last revision** 09/11/2019 / -
- **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

(Contd. on page 15)



Safety Data Sheet

acc. to OSHA HCS

Printing date 09/11/2019

Reviewed on 07/01/2019

Trade name: H2232 2K HARDENER NORMAL

(Contd. of page 14)

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)
HMS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
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
BEI: Biological Exposure Limit
Flam. Liq. 3: Flammable liquids – Category 3
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
Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

US