



1 Identification

- **Product identifier**
- **Trade name:** 50862 World Class 4.2 VOC 2:1 Activator Medium
- **Article number:** 50862
- **Application of the substance / the mixture**
Coating
Isocyanate Hardener

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 2 H225 Highly 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.

STOT SE 2 H371 May cause damage to organs.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

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).

(Contd. on page 2)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 1)

· Hazard pictograms



GHS02 GHS07 GHS08

· Signal word Danger

· Hazard-determining components of labeling:

HDI Prepolymer
heptan-2-one
4-methylpentan-2-one
2-butoxyethyl acetate

· Hazard statements

H225 Highly flammable liquid and vapor.
H302+H332 Harmful if swallowed or 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.
H371 May cause damage to organs.
H335 May cause respiratory irritation.

· Precautionary statements

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 [In case of inadequate ventilation] wear respiratory protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P321 Specific treatment (see on this label).
P330 Rinse mouth.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P362+P364 Take off contaminated clothing and wash it before reuse.

(Contd. on page 3)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 2)

- P363 Wash contaminated clothing before reuse.
- P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.
- P403+P235 Store in a well-ventilated place. Keep cool.
- 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)



- Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Mixtures
- Description:
Mixture: consisting of the following components.
Weight percentages

· Dangerous components:

28182-81-2	HDI Prepolymer	30 - 40%
110-43-0	heptan-2-one	13 - 30%
108-10-1	4-methylpentan-2-one	10 - 13%
123-86-4	n-butyl acetate	10 - 13%
112-07-2	2-butoxyethyl acetate	7 - 10%
108-83-8	2,6-dimethylheptan-4-one	5 - 7%
19549-80-5	4,6-dimethylheptan-2-one	1.5 - 5%

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.

(Contd. on page 4)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 3)

- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Immediately call a 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	HDI Prepolymer	7.8 mg/m ³
110-43-0	heptan-2-one	150 ppm
108-10-1	4-methylpentan-2-one	75 ppm
123-86-4	n-butyl acetate	5 ppm
112-07-2	2-butoxyethyl acetate	15 ppm
108-83-8	2,6-dimethylheptan-4-one	75 ppm

· **PAC-2:**

28182-81-2	HDI Prepolymer	86 mg/m ³
110-43-0	heptan-2-one	670 ppm
108-10-1	4-methylpentan-2-one	500 ppm
123-86-4	n-butyl acetate	200 ppm
112-07-2	2-butoxyethyl acetate	35 ppm
108-83-8	2,6-dimethylheptan-4-one	330 ppm

(Contd. on page 5)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 4)

· PAC-3:		
28182-81-2	HDI Prepolymer	510 mg/m ³
110-43-0	heptan-2-one	4000* ppm
108-10-1	4-methylpentan-2-one	3000* ppm
123-86-4	n-butyl acetate	3000* ppm
112-07-2	2-butoxyethyl acetate	210 ppm
108-83-8	2,6-dimethylheptan-4-one	2000* ppm

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
No special measures required.
Ensure good ventilation/exhaustion at the workplace.
- **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:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

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.

110-43-0 heptan-2-one	
PEL	Long-term value: 465 mg/m ³ , 100 ppm
REL	Long-term value: 465 mg/m ³ , 100 ppm
TLV	Long-term value: 233 mg/m ³ , 50 ppm
108-10-1 4-methylpentan-2-one	
PEL	Long-term value: 410 mg/m ³ , 100 ppm
REL	Short-term value: 300 mg/m ³ , 75 ppm Long-term value: 205 mg/m ³ , 50 ppm
TLV	Short-term value: 307 mg/m ³ , 75 ppm Long-term value: 82 mg/m ³ , 20 ppm
	BEI

(Contd. on page 6)



Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 5)

123-86-4 n-butyl acetate

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

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

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

112-07-2 2-butoxyethyl acetate

REL Long-term value: 33 mg/m³, 5 ppm

TLV Long-term value: 130 mg/m³, 20 ppm

108-83-8 2,6-dimethylheptan-4-one

PEL Long-term value: 290 mg/m³, 50 ppm

REL Long-term value: 150 mg/m³, 25 ppm

TLV Long-term value: 145 mg/m³, 25 ppm

· Ingredients with biological limit values:

108-10-1 4-methylpentan-2-one

BEI 1 mg/L
Medium: urine
Time: end of shift
Parameter: MIBK

· **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:**

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



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.

(Contd. on page 7)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 6)

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:

Liquid

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:

114 °C

· Flash point:

14 °C

· Flammability (solid, gaseous):

Not applicable.

· Ignition temperature:

280 °C

· Decomposition temperature:

Not determined.

· Auto igniting:

Product is not selfigniting.

· Danger of explosion:

In use, may form flammable/explosive vapour-air mixture.

· Explosion limits:

Lower:

1.0 Vol %

Upper:

9.0 Vol %

· Vapor pressure at 20 °C:

10.7 hPa

· Density at 20 °C:

0.94951 g/cm³

· 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:

62.5 %

(Contd. on page 8)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 7)

VOC content:	62.5 % 593.9 g/l / 4.96 lb/gl
Solids content:	37.4 %
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:**

28182-81-2 HDI Prepolymer

Oral	LD50	1000 mg/kg (rat)
Dermal	LD50	5000 mg/kg (rabbit)
Inhalative	LC50/4 h	137-1150 mg/l (rat)

110-43-0 heptan-2-one

Oral	LD50	1670 mg/kg (rat)
Dermal	LD50	12600 mg/kg (rabbit)

- **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)**

108-10-1	4-methylpentan-2-one	2B
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- **NTP (National Toxicology Program)**

None of the ingredients is listed.

(Contd. on page 9)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 8)

· **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.

* **14 Transport information**

· UN-Number	
· DOT, ADR, IMDG, IATA	UN1993
· UN proper shipping name	
· DOT	Flammable liquids, n.o.s. (Methyl isobutyl ketone, n-Amyl methyl ketone)
· ADR	1993 Flammable liquids, n.o.s. (Methyl isobutyl ketone, n-Amyl methyl ketone), special provision 640D
· IMDG	FLAMMABLE LIQUID, N.O.S. (METHYL ISOBUTYL KETONE, n-AMYL METHYL KETONE, HDI Prepolymer)
· IATA	FLAMMABLE LIQUID, N.O.S. (METHYL ISOBUTYL KETONE, n-AMYL METHYL KETONE)

(Contd. on page 10)



Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 9)

· **Transport hazard class(es)**

· **DOT**



· **Class** 3 Flammable liquids
· **Label** 3

· **ADR, IMDG**



· **Class** 3 Flammable liquids
· **Label** 3

· **IATA**



· **Class** 3 Flammable liquids
· **Label** 3

· **Packing group**

· **DOT, ADR, IMDG, IATA** II

· **Environmental hazards:** Product contains environmentally hazardous substances: HDI Prepolymer

· **Marine pollutant:** Yes
Symbol (fish and tree)

· **Special marking (ADR):** Symbol (fish and tree)

· **Special precautions for user** Warning: Flammable liquids

· **EMS Number:** F-E,S-E

· **Stowage Category** B

· **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: 5 L
On cargo aircraft only: 60 L

· **ADR**

· **Excepted quantities (EQ)** Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

(Contd. on page 11)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 10)

<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p>1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml</p>
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p>UN 1993 FLAMMABLE LIQUIDS, N.O.S., SPECIAL PROVISION 640D (METHYL ISOBUTYL KETONE, N-AMYL METHYL KETONE), 3, II</p>

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):**

108-10-1 | 4-methylpentan-2-one

112-07-2 | 2-butoxyethyl acetate

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

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

108-10-1 | 4-methylpentan-2-one

· **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:**

108-10-1 | 4-methylpentan-2-one

· **Carcinogenity categories**

· **EPA (Environmental Protection Agency)**

108-10-1 | 4-methylpentan-2-one

I

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

112-07-2 | 2-butoxyethyl acetate

A3

· **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

(Contd. on page 12)



Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 11)

· **Signal word** *Danger*

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

HDI Prepolymer
heptan-2-one
4-methylpentan-2-one
2-butoxyethyl acetate

· **Hazard statements**

H225 *Highly flammable liquid and vapor.*
H302+H332 *Harmful if swallowed or 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.*
H371 *May cause damage to organs.*
H335 *May cause respiratory irritation.*

· **Precautionary statements**

P201 *Obtain special instructions before use.*
P202 *Do not handle until all safety precautions have been read and understood.*
P210 *Keep away from heat/sparks/open flames/hot surfaces. No smoking.*
P233 *Keep container tightly closed.*
P240 *Ground/bond container and receiving equipment.*
P241 *Use explosion-proof electrical/ventilating/lighting/equipment.*
P242 *Use only non-sparking tools.*
P243 *Take precautionary measures against static discharge.*
P260 *Do not breathe dust/fume/gas/mist/vapors/spray.*
P264 *Wash thoroughly after handling.*
P270 *Do not eat, drink or smoke when using this product.*
P271 *Use only outdoors or in a well-ventilated area.*
P272 *Contaminated work clothing must not be allowed out of the workplace.*
P280 *Wear protective gloves/protective clothing/eye protection/face protection.*
P284 *[In case of inadequate ventilation] wear respiratory protection.*
P301+P312 *IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.*
P303+P361+P353 *If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*
P304+P340 *IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P308+P313 *IF exposed or concerned: Get medical advice/attention.*
P321 *Specific treatment (see on this label).*
P330 *Rinse mouth.*
P333+P313 *If skin irritation or rash occurs: Get medical advice/attention.*
P337+P313 *If eye irritation persists: Get medical advice/attention.*
P342+P311 *If experiencing respiratory symptoms: Call a POISON CENTER/doctor.*
P362+P364 *Take off contaminated clothing and wash it before reuse.*
P363 *Wash contaminated clothing before reuse.*
P370+P378 *In case of fire: Use for extinction: CO2, powder or water spray.*
P403+P235 *Store in a well-ventilated place. Keep cool.*
P405 *Store locked up.*
P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

(Contd. on page 13)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50862 World Class 4.2 VOC 2:1 Activator Medium

(Contd. of page 12)

· **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:** Environment protection department.

· **Date of preparation / last revision** 06/28/2017 / 10

· **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)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

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)

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. 2: Flammable liquids – Category 2

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 2: Specific target organ toxicity (single exposure) – Category 2

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

USA