



Printing date 06/28/2017

Reviewed on 06/21/2017

## 1 Identification

- **Product identifier**
- **Trade name:** *50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast*
- **Article number:** 50454, 50456
- **Application of the substance / the mixture**  
Coating  
Isocyanate Hardener

## 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.

STOT SE 2 H371 May cause damage to organs.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

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 H336 May cause drowsiness or dizziness.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02



GHS07



GHS08



Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 1)

· **Signal word** *Danger*

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

*HDI Prepolymer  
heptan-2-one  
n-butyl acetate  
4-chloro-alpha,alpha,alpha-trifluorotoluene*

· **Hazard statements**

*H226 Flammable liquid and vapor.  
H302 Harmful if swallowed.  
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.  
H371 May cause damage to organs.  
H336 May cause drowsiness or dizziness.*

· **Precautionary statements**

*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.  
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+P341 If inhaled: If breathing is difficult, 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+P311 IF exposed or concerned: Call a POISON CENTER/doctor.  
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 3)



Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 2)

- **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	40 - 60%
123-86-4	n-butyl acetate	13 - 30%
110-43-0	heptan-2-one	13 - 30%
98-56-6	4-chloro-alpha,alpha,alpha-trifluorotoluene	10 - 13%
112-07-2	2-butoxyethyl acetate	5 - 7%

### 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.
- **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.

(Contd. on page 4)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 3)

· **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

**5 Fire-fighting measures**

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, 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:** No special measures required.

**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 <sup>3</sup>
123-86-4	n-butyl acetate	5 ppm
110-43-0	heptan-2-one	150 ppm
112-07-2	2-butoxyethyl acetate	15 ppm

· **PAC-2:**

28182-81-2	HDI Prepolymer	86 mg/m <sup>3</sup>
123-86-4	n-butyl acetate	200 ppm
110-43-0	heptan-2-one	670 ppm
112-07-2	2-butoxyethyl acetate	35 ppm

· **PAC-3:**

28182-81-2	HDI Prepolymer	510 mg/m <sup>3</sup>
123-86-4	n-butyl acetate	3000* ppm
110-43-0	heptan-2-one	4000* ppm
112-07-2	2-butoxyethyl acetate	210 ppm

USA  
(Contd. on page 5)



Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 4)

## 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:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **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.

<b>123-86-4 n-butyl acetate</b>	
PEL	Long-term value: 710 mg/m <sup>3</sup> , 150 ppm
REL	Long-term value: 950 mg/m <sup>3</sup> , 200 ppm
TLV	Short-term value: 712 mg/m <sup>3</sup> , 150 ppm Long-term value: 238 mg/m <sup>3</sup> , 50 ppm
<b>110-43-0 heptan-2-one</b>	
PEL	Long-term value: 465 mg/m <sup>3</sup> , 100 ppm
REL	Long-term value: 465 mg/m <sup>3</sup> , 100 ppm
TLV	Long-term value: 233 mg/m <sup>3</sup> , 50 ppm
<b>112-07-2 2-butoxyethyl acetate</b>	
REL	Long-term value: 33 mg/m <sup>3</sup> , 5 ppm
TLV	Long-term value: 130 mg/m <sup>3</sup> , 20 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.  
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.

(Contd. on page 6)



Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 5)

**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.

**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:	124-128 °C

**Flash point:** 27 °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:	7.5 Vol %

(Contd. on page 7)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 6)

· Vapor pressure at 20 °C:	10.7 hPa
· Density at 20 °C:	1.01646 g/cm <sup>3</sup>
· 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:	56.1 %
VOC content:	43.7 %
	489.8 g/l / 4.09 lb/gl
· Solids content:	43.9 %
· 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:**

### 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.

(Contd. on page 8)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 7)

- **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)**

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.

**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

(Contd. on page 9)





Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 8)

· **UN proper shipping name**  
 · **DOT**  
 · **ADR**  
 · **IMDG**  
 · **IATA**

*Flammable liquids, n.o.s. (n-butyl acetate, n-Amyl methyl ketone)  
 1993 Flammable liquids, n.o.s. (n-butyl acetate, n-Amyl methyl ketone), special provision 640E  
 FLAMMABLE LIQUID, N.O.S. (n-butyl acetate, n-AMYL METHYL KETONE, HDI Prepolymer)  
 FLAMMABLE LIQUID, N.O.S. (n-butyl acetate, n-AMYL METHYL KETONE)*

· **Transport hazard class(es)**

· **DOT**



· **Class**  
 · **Label**

*3 Flammable liquids  
 3*

· **ADR, IMDG**



· **Class**  
 · **Label**

*3 Flammable liquids  
 3*

· **IATA**



· **Class**  
 · **Label**

*3 Flammable liquids  
 3*

· **Packing group**

· **DOT, ADR, IMDG, IATA**

*III*

· **Environmental hazards:**  
 · **Marine pollutant:**

*Product contains environmentally hazardous substances: HDI Prepolymer  
 Yes*

· **Special marking (ADR):**

*Symbol (fish and tree)  
 Symbol (fish and tree)*

· **Special precautions for user**

*Warning: Flammable liquids*

· **EMS Number:**

*F-E,S-E*

· **Stowage Category**

*A*

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

*Not applicable.*

(Contd. on page 10)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 9)

**· Transport/Additional information:**

**· DOT**

**· Quantity limitations** On passenger aircraft/rail: 60 L  
On cargo aircraft only: 220 L

**· ADR**

**· Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 1000 ml

**· IMDG**

**· Limited quantities (LQ)** 5L  
**· Excepted quantities (EQ)** Code: E1  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 1000 ml

**· UN "Model Regulation":** UN 1993 FLAMMABLE LIQUIDS, N.O.S., SPECIAL PROVISION 640E (N-BUTYL ACETATE, N-AMYL METHYL KETONE), 3, III

**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):**

112-07-2 | 2-butoxyethyl acetate

**· 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:**

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.

**· Cancerogenity categories**

**· EPA (Environmental Protection Agency)**

None of the ingredients is listed.

**· 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.

(Contd. on page 11)

Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 10)

· **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:**

HDI Prepolymer

heptan-2-one

n-butyl acetate

4-chloro-alpha,alpha,alpha-trifluorotoluene

· **Hazard statements**

H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

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.

H371 May cause damage to organs.

H336 May cause drowsiness or dizziness.

· **Precautionary statements**

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.

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+P341 If inhaled: If breathing is difficult, 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+P311 IF exposed or concerned: Call a POISON CENTER/doctor.

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: CO<sub>2</sub>, powder or water spray.

(Contd. on page 12)



Printing date 06/28/2017

Reviewed on 06/21/2017

Trade name: 50454 & 50456 World Class 4.2 VOC 4:1 Activator Fast

(Contd. of page 11)

- 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.
- **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
  - 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
  - Skin Sens. 1: Skin sensitisation – Category 1
  - STOT SE 2: Specific target organ toxicity (single exposure) – Category 2
- **\* Data compared to the previous version altered.**

USA