

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 05/02/2022

Reviewed on 05/02/2022

**1 Identification**

- **Product identifier**
- **Trade name: Hardener**
- **Article number: Series 700-HDA**
- **Application of the substance / the mixture** Additive
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
DECO TECHnology Group Inc.  
PRINTCOLOR SCREEN AG  
TEL (714) 639-3326  
FAX (714) 639-2261
- **Information department:** Product safety department
- **Emergency telephone number:** 800-535-5053

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 3

H226

Flammable liquid and vapor.



GHS07

Acute Toxicity - Inhalation 4

H332

Harmful if inhaled.

Sensitization - Skin 1

H317

May cause an allergic skin reaction.

Specific Target Organ Toxicity - Single Exposure 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).

- **Hazard pictograms**



GHS02 GHS07

- **Signal word** Warning

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

Hexamethylen-1,6-diisocyanat homopolymer

2-methoxy-1-methylethyl acetate

hexamethylene-di-isocyanate

- **Hazard statements**

Flammable liquid and vapor.

Harmful if inhaled.

May cause an allergic skin reaction.

May cause respiratory irritation. May cause drowsiness or dizziness.

- **Precautionary statements**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

(Contd. on page 2)

Printing date 05/02/2022

Reviewed on 05/02/2022

**Trade name: Hardener**

(Contd. of page 1)

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  
 Use only outdoors or in a well-ventilated area.  
 Contaminated work clothing must not be allowed out of the workplace.  
 Wear protective gloves/protective clothing/eye protection/face 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.  
 Call a poison center/doctor if you feel unwell.  
 Specific treatment (see on this label).  
 If skin irritation or rash occurs: Get medical advice/attention.  
 Wash contaminated clothing before reuse.  
 In case of fire: Use CO<sub>2</sub>, powder or water spray to extinguish.  
 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 = 0  
 Fire = 2  
 Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 1  
 Fire = 2  
 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:**

CAS: 28182-81-2	Hexamethylen-1,6-diisocyanat homopolymer	50-100%
CAS: 108-65-6	2-methoxy-1-methylethyl acetate	≥20-≤25%
CAS: 822-06-0	hexamethylene-di-isocyanate	≥0.1-<0.5%

**4 First-aid measures**

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **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 rinse with water.  
 If skin irritation continues, consult a doctor.

(Contd. on page 3)

Printing date 05/02/2022

Reviewed on 05/02/2022

**Trade name: Hardener**

(Contd. of page 2)

- **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:**  
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:**  
Wear self-contained respiratory protective device.  
Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Keep away from ignition sources
- **Environmental precautions:** Prevent seepage into sewage system, workpits and cellars.
- **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:**

CAS: 28182-81-2	Hexamethylen-1,6-diisocyanat homopolymer	7.8 mg/m <sup>3</sup>
CAS: 108-65-6	2-methoxy-1-methylethyl acetate	50 ppm
CAS: 822-06-0	hexamethylene-di-isocyanate	0.018 ppm

· **PAC-2:**

CAS: 28182-81-2	Hexamethylen-1,6-diisocyanat homopolymer	86 mg/m <sup>3</sup>
CAS: 108-65-6	2-methoxy-1-methylethyl acetate	1,000 ppm
CAS: 822-06-0	hexamethylene-di-isocyanate	0.2 ppm

· **PAC-3:**

CAS: 28182-81-2	Hexamethylen-1,6-diisocyanat homopolymer	510 mg/m <sup>3</sup>
CAS: 108-65-6	2-methoxy-1-methylethyl acetate	5000* ppm
CAS: 822-06-0	hexamethylene-di-isocyanate	3 ppm

US

(Contd. on page 4)

Printing date 05/02/2022

Reviewed on 05/02/2022

**Trade name: Hardener**

(Contd. of page 3)

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Prevent formation of aerosols.  
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.  
Use only in well ventilated areas.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.
- **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:** Store away from foodstuffs.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Storage class:** 3
- **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 remaining constituent has no known exposure limits.

<b>CAS: 108-65-6 2-methoxy-1-methylethyl acetate</b>	
WEEL	Long-term value: 50 ppm
<b>CAS: 822-06-0 hexamethylene-di-isocyanate</b>	
REL	Long-term value: 0.035 mg/m <sup>3</sup> , 0.005 ppm Ceiling limit value: 0.14* mg/m <sup>3</sup> , 0.02* ppm *10-min
TLV	Long-term value: 0.005 ppm BEI

- **Ingredients with biological limit values:**

<b>CAS: 822-06-0 hexamethylene-di-isocyanate</b>	
BEI	15 µg/g creatinine Medium: urine Time: end of shift Parameter: 1.6-Hexamethylene diamine with hydrolysis (nonspecific)

- **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.  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the eyes and skin.
- **Breathing equipment:** Not necessary if room is well-ventilated.

(Contd. on page 5)

Printing date 05/02/2022

Reviewed on 05/02/2022

**Trade name: Hardener**

(Contd. of page 4)

· **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 trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Safety glasses

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· <b>Form:</b>	Liquid
· <b>Color:</b>	Yellowish
· <b>Odor:</b>	Characteristic
· <b>Odor threshold:</b>	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· <b>Melting point/Melting range:</b>	Undetermined.
· <b>Boiling point/Boiling range:</b>	150 °C (302 °F)

· **Flash point:** 44 °C (111.2 °F) (Abel Pensky)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 315 °C (599 °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:**

· <b>Lower:</b>	1.5 Vol %
· <b>Upper:</b>	10.8 Vol %

· **Vapor pressure at 20 °C (68 °F):** 3.4 hPa (2.6 mm Hg)

· **Density at 20 °C (68 °F):** 1.05 g/cm<sup>3</sup> (8.76 lbs/gal)

(Contd. on page 6)

Printing date 05/02/2022

Reviewed on 05/02/2022

**Trade name: Hardener**

(Contd. of page 5)

- **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 at 20 °C (68 °F): 250 mPas
- Kinematic: Not determined.

- **Solvent separation test**
- VOC content:** 24.75 %
- 259.9 g/l / 2.17 lb/gal
- VOC (EC)** 24.75 %

- **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**
- Reacts with water.
- Reacts with amines.
- Reacts with alcohols.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
- Nitrogen oxides
- Carbon monoxide and carbon dioxide

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **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)**

None of the ingredients is listed.

(Contd. on page 7)

Printing date 05/02/2022

Reviewed on 05/02/2022

**Trade name: Hardener**

(Contd. of page 6)

· **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 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

· **UN-Number**

· **DOT, ADR, IMDG, IATA**

UN1210

· **UN proper shipping name**

· **DOT**

Printing ink related material

· **ADR**

1210 PRINTING INK RELATED MATERIAL

· **IMDG, IATA**

PRINTING INK RELATED MATERIAL

· **Transport hazard class(es)**

· **DOT**



· **Class**

3 Flammable liquids


(Contd. on page 8)

Printing date 05/02/2022

Reviewed on 05/02/2022

**Trade name: Hardener**

(Contd. of page 7)

· <b>Label</b>	3
· <b>ADR, IMDG, IATA</b>	
	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3
· <b>Packing group</b>	III
· <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special precautions for user</b>	Warning: Flammable liquids
· <b>Hazard identification number (Kemler code):</b>	30
· <b>EMS Number:</b>	F-E,S-D
· <b>Stowage Category</b>	A
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 1210 PRINTING INK RELATED MATERIAL, 3, III

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.

- **Sara**

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

None of the ingredient is listed.

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

CAS: 822-06-0 | hexamethylene-di-isocyanate

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

All components have the value ACTIVE.

- **Hazardous Air Pollutants**

CAS: 822-06-0 | hexamethylene-di-isocyanate

- **Proposition 65**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

(Contd. on page 9)



Printing date 05/02/2022

Reviewed on 05/02/2022

**Trade name: Hardener**

(Contd. of page 8)

· **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)**

None of the ingredients is listed.

· **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

· **Signal word** Warning

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

Hexamethylen-1,6-diisocyanat homopolymer  
2-methoxy-1-methylethyl acetate  
hexamethylene-di-isocyanate

· **Hazard statements**

Flammable liquid and vapor.  
Harmful if inhaled.  
May cause an allergic skin reaction.  
May cause respiratory irritation. May cause drowsiness or dizziness.

· **Precautionary statements**

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  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing must not be allowed out of the workplace.  
Wear protective gloves/protective clothing/eye protection/face 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.  
Call a poison center/doctor if you feel unwell.  
Specific treatment (see on this label).  
If skin irritation or rash occurs: Get medical advice/attention.  
Wash contaminated clothing before reuse.  
In case of fire: Use CO<sub>2</sub>, powder or water spray to extinguish.  
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.

(Contd. on page 10)

Printing date 05/02/2022

Reviewed on 05/02/2022

**Trade name: Hardener**

(Contd. of page 9)

· **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:** hse@printcolor.ch

· **Date of preparation / last revision** 05/02/2022 / -

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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

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)

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

Flammable Liquids 3: Flammable liquids – Category 3

Acute Toxicity - Inhalation 4: Acute toxicity – Category 4

Sensitization - Skin 1: Skin sensitisation – Category 1

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3