



## Safety Data Sheet acc. to OSHA HCS

Printing date 05/31/2023

Reviewed on 05/31/2023

### 1 Identification

- **Product identifier**
- **Trade name:** AE.002 HARDENER
- **Article number:** AE.002
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Lusid Technologies  
4725 S Camp Kearns Road  
Kearns, UT 840118
- **Information department:** Product safety department
- **Emergency telephone number:**  
24 Hrs Emergency Contact:  
INFOTRAC  
1-800-535-5053

### 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids 3                      H226 Flammable liquid and vapor.



GHS08 Health hazard

Sensitization - Respiratory 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Eye Irritation 2A                      H319 Causes serious eye irritation.  
Sensitization - Skin 1                      H317 May cause an allergic skin reaction.

- **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 05/31/2023

Reviewed on 05/31/2023

Trade name: AE.002 HARDENER

(Contd. of page 1)

- **Hazard pictograms**



GHS02 GHS08

- **Signal word** Danger

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

poly(hexamethylene diisocyanate)

- **Hazard statements**

Flammable liquid and vapor.

Causes serious eye irritation.

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

May cause an allergic skin reaction.

- **Precautionary statements**

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

Keep container tightly closed.

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.

Contaminated work clothing must not be allowed out of the workplace.

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: If breathing is difficult, 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 skin irritation or rash occurs: Get medical advice/attention.

Specific treatment (see on this label).

If eye irritation persists: Get medical advice/attention.

If experiencing respiratory symptoms: Call a poison center/doctor.

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 cool.

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.

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/31/2023

Reviewed on 05/31/2023

Trade name: AE.002 HARDENER

· **vPvB:** Not applicable.

(Contd. of page 2)

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

|            |                                  |        |
|------------|----------------------------------|--------|
| 110-43-0   | heptan-2-one                     | 25-50% |
| 28182-81-2 | poly(hexamethylene diisocyanate) | 25-50% |
| 123-86-4   | n-butyl acetate                  | 10-25% |

## 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 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:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **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:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.

(Contd. on page 4)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/31/2023

Reviewed on 05/31/2023

Trade name: AE.002 HARDENER

(Contd. of page 3)

- **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:**

|            |                                  |                       |
|------------|----------------------------------|-----------------------|
| 110-43-0   | heptan-2-one                     | 150 ppm               |
| 28182-81-2 | poly(hexamethylene diisocyanate) | 7.8 mg/m <sup>3</sup> |
| 123-86-4   | n-butyl acetate                  | 5 ppm                 |
| 822-06-0   | hexamethylene-di-isocyanate      | 0.018 ppm             |

- **PAC-2:**

|            |                                  |                      |
|------------|----------------------------------|----------------------|
| 110-43-0   | heptan-2-one                     | 670 ppm              |
| 28182-81-2 | poly(hexamethylene diisocyanate) | 86 mg/m <sup>3</sup> |
| 123-86-4   | n-butyl acetate                  | 200 ppm              |
| 822-06-0   | hexamethylene-di-isocyanate      | 0.2 ppm              |

- **PAC-3:**

|            |                                  |                       |
|------------|----------------------------------|-----------------------|
| 110-43-0   | heptan-2-one                     | 4000* ppm             |
| 28182-81-2 | poly(hexamethylene diisocyanate) | 510 mg/m <sup>3</sup> |
| 123-86-4   | n-butyl acetate                  | 3000* ppm             |
| 822-06-0   | hexamethylene-di-isocyanate      | 3 ppm                 |

## 7 Handling and storage

- **Handling:**

- **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

- **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 section 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.

- **110-43-0 heptan-2-one**

PEL Long-term value: 465 mg/m<sup>3</sup>, 100 ppm

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/31/2023

Reviewed on 05/31/2023

Trade name: AE.002 HARDENER

(Contd. of page 4)

REL Long-term value: 465 mg/m<sup>3</sup>, 100 ppm

TLV Long-term value: 50 ppm

**123-86-4 n-butyl acetate**PEL Long-term value: 710 mg/m<sup>3</sup>, 150 ppmREL Short-term value: 950 mg/m<sup>3</sup>, 200 ppmLong-term value: 710 mg/m<sup>3</sup>, 150 ppm

TLV Short-term value: 150 ppm

Long-term value: 50 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.  
 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.
- **Eye protection:**



Tightly sealed goggles

USA

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/31/2023

Reviewed on 05/31/2023

Trade name: AE.002 HARDENER

(Contd. of page 5)

## 9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

- **Form:** Liquid

- **Color:** Clear

- **Odor:** Characteristic

- **Odor threshold:** Not determined.

- **pH-value:** Not determined (pH N/A in solvent coatings)

- **Change in condition**

- **Melting point/Melting range:** Undetermined.

- **Boiling point/Boiling range:** 124-128 °C (255.2-262.4 °F)

- **Flash point:** 27 °C (80.6 °F)

- **Flammability (solid, gaseous):** Flammable.

- **Auto igniting:** 370 °C (698 °F)

- **Decomposition temperature:** Not determined.

- **Ignition temperature:** Product is not selfigniting.

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**

- **Lower:** 1 Vol %

- **Upper:** 7.5 Vol %

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

- **Vapor pressure at 50 °C (122 °F):** 55 hPa (41.3 mm Hg)

- **Density at 20 °C (68 °F):** 0.9698 g/cm<sup>3</sup> (8.093 lbs/gal)

- **Relative density** Not determined.

- **Vapor density** Not determined.

- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with**

- **Water:** Fully miscible.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

- **Dynamic:** Not determined.

- **Kinematic:** Not determined.

- **Solvent content:**

- **Organic solvents:** 58.2 %

- **VOC content:** 58.20 %

- **484.8 g/l / 4.05 lb/gal**

- **Solids content:** 50.0 %

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

## 10 Stability and reactivity

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

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/31/2023

Reviewed on 05/31/2023

Trade name: AE.002 HARDENER

(Contd. of page 6)

- **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:**

### 110-43-0 heptan-2-one

|        |      |                       |
|--------|------|-----------------------|
| Oral   | LD50 | 1,670 mg/kg (rat)     |
| Dermal | LD50 | 12,600 mg/kg (rabbit) |

- **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.

- **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.

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/31/2023

Reviewed on 05/31/2023

Trade name: AE.002 HARDENER



(Contd. of page 7)

- **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.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **UN-Number**
- **DOT, IMDG, IATA** UN1110
- **UN proper shipping name**
- **DOT** n-Amyl methyl ketone
- **IMDG, IATA** n-AMYL METHYL KETONE
- **Transport hazard class(es)**
- **DOT**
- 
- **Class** 3 Flammable liquids
- **Label** 3
- **IMDG, IATA**
- 
- **Class** 3 Flammable liquids
- **Label** 3
- **Packing group**
- **DOT, IMDG, IATA** III
- **Environmental hazards:**
- **Marine pollutant:** No
- **Special precautions for user** Warning: Flammable liquids
- **Hazard identification number (Kemler code):** 30
- **EMS Number:** F-E, S-D
- **Stowage Category** A

(Contd. on page 9)

USA



# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/31/2023

Reviewed on 05/31/2023

Trade name: AE.002 HARDENER

(Contd. of page 8)

- |  |  |
|--|--|
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.  |
| <b>· Transport/Additional information:</b>                                       |  |
| <b>· DOT</b>   |  |
| <b>· Quantity limitations</b>  | On passenger aircraft/rail: 60 L<br>On cargo aircraft only: 220 L  |
| <hr style="border-top: 1px dashed black;"/>                                      |  |
| <b>· IMDG</b>  |  |
| <b>· Limited quantities (LQ)</b>   | 5L   |
| <b>· Excepted quantities (EQ)</b>  | Code: E1<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml |
| <b>· UN "Model Regulation":</b>  | UN 1110 N-AMYL METHYL KETONE, 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 ingredients is listed.

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

822-06-0 hexamethylene-di-isocyanate

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

All components have the value ACTIVE.

- **Hazardous Air Pollutants**

822-06-0 hexamethylene-di-isocyanate

- **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.

- **Carcinogenic 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.

(Contd. on page 10)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/31/2023

Reviewed on 05/31/2023

Trade name: AE.002 HARDENER

(Contd. of page 9)

- **GHS label elements**

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

- **Hazard pictograms**



GHS02 GHS08

- **Signal word** Danger

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

poly(hexamethylene diisocyanate)

- **Hazard statements**

Flammable liquid and vapor.

Causes serious eye irritation.

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

May cause an allergic skin reaction.

- **Precautionary statements**

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

Keep container tightly closed.

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.

Contaminated work clothing must not be allowed out of the workplace.

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: If breathing is difficult, 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 skin irritation or rash occurs: Get medical advice/attention.

Specific treatment (see on this label).

If eye irritation persists: Get medical advice/attention.

If experiencing respiratory symptoms: Call a poison center/doctor.

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 cool.

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.

- **Contact:** Product Safety Dept.

- **Date of preparation / last revision** 05/31/2023

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

(Contd. on page 11)

USA

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/31/2023

Reviewed on 05/31/2023

**Trade name: AE.002 HARDENER**

(Contd. of page 10)

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  
Flammable Liquids 3: Flammable liquids – Category 3  
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A  
Sensitization - Respiratory 1: Respiratory sensitisation – Category 1  
Sensitization - Skin 1: Skin sensitisation – Category 1

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

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