



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: REACH Regulation (EC) No 1907/2006, as retained in UK law by (SI 2019/758 as amended)

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product Name HCP-X 160

Pure substance/mixture Mixture

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use Hardener

Uses advised against Coatings (aprotic) Consumer applications that require heating above room temperature before or during use are not supported

Reason why uses advised against Use advised against in Chemical Safety Assessment per REACH Annex I point 7 2.3

### 1.3. Details of the supplier of the safety data sheet

#### Company Name

Bostik Limited  
Common Rd  
ST16 3EH  
Stafford UK  
Tel: +44 (1785) 27 26 25  
Fax: +44 (1785) 25 72 36

E-mail address SDS.box-EU@bostik.com

### 1.4. Emergency telephone number

United Kingdom Bostik: +44 (1785) 272650 (9am to 5pm Mon-Fri)  
NHS: 111

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

GB CLP (SI 2020/1567 as amended)

Flammable liquids	Category 2 - (H225)
Eye irritation	Category 2 - (H319)
Respiratory sensitisation	Category 1 - (H334)
Skin sensitisation	Category 1 - (H317)
Carcinogenicity	Category 2 - (H351)
Specific target organ toxicity (single exposure)	Category 3 - (H336)
Category 3 Target organ effects: Narcotic effects.	

### 2.2. Label elements

Contains Ethyl acetate; 4,4'-Methylenediphenyl diisocyanate

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5



**Signal word**  
Danger

## Hazard statements

H317 - May cause an allergic skin reaction.  
H319 - Causes serious eye irritation.  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H336 - May cause drowsiness or dizziness.  
H351 - Suspected of causing cancer.  
H225 - Highly flammable liquid and vapour.

## EU Specific Hazard Statements

EUH066 - Repeated exposure may cause skin dryness or cracking

## Precautionary Statements - EU (§28, 1272/2008)

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P261 - Avoid breathing dust, fume, gas, mist, vapors and spray  
P280 - Wear protective gloves, protective clothing, eye protection and face protection  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor  
P370 + P378 - In case of fire: Use dry chemical, CO<sub>2</sub>, water spray or alcohol-resistant foam to extinguish

## Special provisions concerning the labelling of certain mixtures

As from 24 August 2023 adequate training is required before industrial or professional use.

## Additional information

This product requires tactile warnings if supplied to the general public.

## 2.3. Other hazards

Contact with water (moisture) liberates carbon dioxide, which causes pressure increase in closed containers. Causes mild skin irritation.

## PBT & vPvB

This mixture contains no substance considered to be persistent, bioaccumulating or toxic (PBT). This mixture contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No (EU Index No)	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)	Notes
Ethyl acetate 141-78-6	40 - <80	01-2119475103 -46-XXXX	205-500-4 (607-022-00-5)	Eye Irrit. 2 (H319) STOT SE 3 (H336) Flam. Liq. 2 (H225) (EUH066)	-	-	-	-
4,4'-Methylenediphe	1 - <3	01-2119457014	202-966-0	Acute Tox. 4 (H332)	STOT SE 3 ::	-	-	C,2

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

nyl diisocyanate 101-68-8		-47-XXXX	(615-005-00-9)	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Carc. 2 (H351) STOT SE 3 (H335) STOT RE 2 (H373)	C>=5% Skin Irrit. 2 :: C>=5% Eye Irrit. 2 :: C>=5% Resp. Sens. 1 :: C>=0.1%			
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Note C - Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

Note 2 - The concentration of isocyanate stated is the percentage by weight of the free monomer calculated with reference to the total weight of the mixture.

**Full text of H- and EUH-phrases: see section 16**

## Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATEmix) for classifying a mixture based on its components

Chemical name	EC No (EU Index No)	CAS No.	Oral LD50 mg/kg	Dermal LD50 mg/kg	Inhalation LC50 - 4 hour - dust/mist - mg/L	Inhalation LC50 - 4 hour - vapour - mg/L	Inhalation LC50 - 4 hour - gas - ppm
Ethyl acetate	205-500-4 (607-022-00-5)	141-78-6	-	-	-	14.4131	-
4,4'-Methylenediphenyl diisocyanate	202-966-0 (615-005-00-9)	101-68-8	-	-	1.5	-	-

This product does not contain candidate substances of very high concern at a concentration  $\geq 0.1\%$  (Regulation (EC) No. 1907/2006 (REACH), Article 59)

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.
<b>Inhalation</b>	May cause allergic respiratory reaction. If breathing has stopped, give artificial respiration. Get medical attention immediately. Remove to fresh air. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor.
<b>Ingestion</b>	May produce an allergic reaction. Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

**Self-protection of the first aider** Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

## **4.2. Most important symptoms and effects, both acute and delayed**

**Symptoms** May cause allergy or asthma symptoms or breathing difficulties if inhaled. Coughing and/or wheezing. Itching. Rashes. Hives. May cause redness and tearing of the eyes. Burning sensation. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Prolonged contact may cause redness and irritation.

**Effects of Exposure** Suspected of causing cancer.

## **4.3. Indication of any immediate medical attention and special treatment needed**

**Note to doctors** May cause sensitisation in susceptible persons. Treat symptomatically.

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

**Suitable Extinguishing Media** Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray. Alcohol resistant foam.

**Unsuitable extinguishing media** No information available.

### **5.2. Special hazards arising from the substance or mixture**

**Specific hazards arising from the chemical** Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Product is or contains a sensitizer. May cause sensitisation by inhalation. May cause sensitisation by skin contact.

**Hazardous combustion products** Carbon oxides. Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Hydrogen cyanide. Isocyanates.

### **5.3. Advice for firefighters**

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

## **SECTION 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

**Other information** Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

**For emergency responders** Use personal protection recommended in Section 8.

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

## 6.2. Environmental precautions

**Environmental precautions** Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

## 6.3. Methods and material for containment and cleaning up

**Methods for containment** Keep from any possible contact with water. Do NOT close container (evolution of carbon dioxide - CO<sub>2</sub>). Keep wet and put outdoors in a secured place for a few days. Then dispose to of according to local / national regulations (see Section 13). Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Dyke far ahead of liquid spill for later disposal.

**Methods for cleaning up** 2%, Liquid dishwashing soap, a mixture of 90% water and 8-10% sodium carbonate. Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. Decontaminate floor with decontamination solution letting stand for at least 15 minutes.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

## 6.4. Reference to other sections

**Reference to other sections** See section 8 for more information. See section 13 for more information.

## **SECTION 7: Handling and storage**

### 7.1. Precautions for safe handling

**Advice on safe handling** Use personal protection equipment. Avoid breathing vapours or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse.

**General hygiene considerations** Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store locked up. Keep out of the reach of children. Keep away from water or moist air.

**Recommended storage temperature** Keep at temperatures between 10 and 35 °C.

### 7.3. Specific end use(s)

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

**Specific use(s)**  
Hardener.

**Risk Management Methods (RMM)** The information required is contained in this Safety Data Sheet.

**Other information** Observe technical data sheet.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Exposure Limits

Chemical name	European Union	United Kingdom
Ethyl acetate 141-78-6	TWA: 734 mg/m <sup>3</sup> ; TWA: 200 ppm; STEL: 1468 mg/m <sup>3</sup> ; STEL: 400 ppm;	TWA: 734 mg/m <sup>3</sup> ; TWA: 200 ppm; STEL: 1468 mg/m <sup>3</sup> ; STEL: 400 ppm;
4,4'-Methylenediphenyl diisocyanate 101-68-8	TWA: 10 µg NCO / m <sup>3</sup> (2.9 ppb) STEL: 20 µg NCO / m <sup>3</sup> (5.8 ppb) Sk* +	TWA: 0.02 mg/m <sup>3</sup> ; STEL: 0.07 mg/m <sup>3</sup> ; poS

Chemical name	European Union	Ireland	United Kingdom
4,4'-Methylenediphenyl diisocyanate 101-68-8	-	1 µmol/mol Creatinine (urine - urinary Diamine post task)	-

**Derived No Effect Level (DNEL)** No information available

Derived No Effect Level (DNEL)			
Ethyl acetate (141-78-6)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
worker Long term Systemic health effects	Dermal	63 mg/kg bw/d	
worker Short term Systemic health effects	Inhalation	1468 mg/m <sup>3</sup>	
worker Long term Local health effects	Inhalation	734 mg/m <sup>3</sup>	
worker Short term Local health effects	Inhalation	1468 mg/m <sup>3</sup>	
worker Long term Systemic health effects	Inhalation	734 mg/m <sup>3</sup>	

4,4'-Methylenediphenyl diisocyanate (101-68-8)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
worker Short term Systemic health effects	Dermal	50 mg/kg bw/d	
worker Short term Systemic health effects	Inhalation	0.1 mg/m <sup>3</sup>	
worker Short term Local health effects	Dermal	28700 µg/cm <sup>2</sup>	
worker	Inhalation	0.1 mg/m <sup>3</sup>	

# SAFETY DATA SHEET

HCP-X 160

Supersedes date 07-Apr-2023

Revision date 26-May-2025

Revision Number 5

Short term Local health effects			
worker Long term Systemic health effects	Inhalation	0.05 mg/m <sup>3</sup>	
worker Long term Local health effects	Inhalation	0.05 mg/m <sup>3</sup>	

Derived No Effect Level (DNEL)			
Ethyl acetate (141-78-6)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
Consumer Long term Systemic health effects	Oral	4.5 mg/kg bw/d	
Consumer Long term Systemic health effects	Dermal	37 mg/kg bw/d	
Consumer Short term Systemic health effects	Inhalation	734 mg/m <sup>3</sup>	
Consumer Long term Local health effects	Inhalation	367 mg/m <sup>3</sup>	
Consumer Short term Local health effects	Inhalation	734 mg/m <sup>3</sup>	
Consumer Long term Systemic health effects	Inhalation	367 mg/m <sup>3</sup>	

4,4'-Methylenediphenyl diisocyanate (101-68-8)			
Type	Exposure route	Derived No Effect Level (DNEL)	Safety factor
Consumer Short term Systemic health effects	Dermal	25 mg/kg bw/d	
Consumer Short term Systemic health effects	Inhalation	0.05 mg/m <sup>3</sup>	
Consumer Short term Systemic health effects	Oral	20 mg/kg bw/d	
Consumer Short term Local health effects	Dermal	17200 µg/cm <sup>2</sup>	
Consumer Short term Local health effects	Inhalation	0.05 mg/m <sup>3</sup>	
Consumer Long term Systemic health effects	Inhalation	0.025 mg/m <sup>3</sup>	
Consumer Long term Local health effects	Inhalation	0.025 mg/m <sup>3</sup>	

**Predicted No Effect Concentration**

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

## (PNEC)

Predicted No Effect Concentration (PNEC)	
Ethyl acetate (141-78-6)	
Environmental compartment	Predicted No Effect Concentration (PNEC)
Freshwater	0.24 mg/l
Marine water	0.024 mg/l
Freshwater sediment	1.15 mg/kg
Marine sediment	0.115 mg/kg
Soil	0.148 mg/kg
Microorganisms in sewage treatment	650 mg/l

  

4,4'-Methylenediphenyl diisocyanate (101-68-8)	
Environmental compartment	Predicted No Effect Concentration (PNEC)
Freshwater	1 mg/l
Marine water	0.1 mg/l
Soil	1 mg/kg dry weight
Sewage treatment plant	1 mg/l
Freshwater - intermittent	10 mg/l

## 8.2. Exposure controls

<b>Engineering controls</b>	Ensure adequate ventilation, especially in confined areas. Vapours/aerosols must be exhausted directly at the point of origin.
<b>Personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles). Eye protection must conform to standard EN 166.
<b>Hand protection</b>	Wear suitable gloves. Gloves must conform to standard EN 374. Recommended Use: Nitrile rubber. Viton™. Unsuitable protective clothing. Natural rubber. Disposable gloves. Glove thickness > 0.7mm. The breakthrough time for the mentioned glove material is in general greater than 480 min. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.
<b>Skin and body protection</b>	Wear suitable protective clothing.
<b>Respiratory protection</b>	In case of inadequate ventilation wear respiratory protection. During spraying wear suitable respiratory equipment.
<b>Recommended filter type:</b>	Wear a respirator conforming to EN 140 with Type A/P2 filter or better. Organic gases and vapours filter conforming to EN 14387.

**Environmental exposure controls** Do not allow uncontrolled discharge of product into the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Appearance</b>	Viscous
<b>Colour</b>	Light yellow
<b>Odour</b>	No information available.

Property	Values	Remarks • Method
<b>Melting point / freezing point</b>	No data available	None known
<b>Initial boiling point and boiling range</b>	77 °C	
<b>Flammability</b>	No data available	Flammable liquid
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Flash point</b>	-5 °C	
<b>Autoignition temperature</b>	No data available	None known



# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

Decomposition temperature		None known
pH	No data available	Not applicable. Reacts with water.
pH (as aqueous solution)	No data available	Not applicable
Kinematic viscosity	No data available	None known
Dynamic viscosity	approx 4000 - mPa s	Spindle A4 @ 20 rpm @ 23 °C
Water solubility	Reacts with water.	Reacts with water
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Vapour pressure	<110 kPa	kPa @ 50 °C
Relative density	No data available	None known
Bulk density	No data available	
Density	1.09 g/cm <sup>3</sup>	
Relative vapour density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

## 9.2. Other information

Solid content (%)	60	
VOC content		No data available

9.2.1. Information with regards to physical hazard classes  
Not applicable

9.2.2. Other safety characteristics  
No information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity	No information available.
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### 10.2. Chemical stability

Stability	Reacts with water.
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### Explosion data

Sensitivity to mechanical impact	None.
Sensitivity to static discharge	Yes.

### 10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Contact with water (moisture) liberates carbon dioxide, which causes pressure increase in closed containers. Exothermic reaction with. Amines. Alcohols.
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Hazardous polymerisation	Hazardous polymerisation may occur. Hazardous polymerisation may take place during a fire due to heat. Closed containers could violently rupture.
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### 10.4. Conditions to avoid

Conditions to avoid	Heat, flames and sparks. Exposure to water.
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### 10.5. Incompatible materials

Incompatible materials	None known based on information supplied.
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### 10.6. Hazardous decomposition products

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

**Hazardous decomposition products** Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>). Hydrogen cyanide. Thermal decomposition can lead to release of irritating and toxic gases and vapours.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Information on likely routes of exposure

##### Product Information

<b>Inhalation</b>	Specific test data for the substance or mixture is not available. May cause sensitisation in susceptible persons. (based on components). May cause irritation of respiratory tract. May cause drowsiness or dizziness.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May cause sensitisation by skin contact. Prolonged contact may cause redness and irritation. Causes mild skin irritation.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. May cause additional effects as listed under "Inhalation". Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing. Coughing and/ or wheezing. Itching. Rashes. Hives. May cause redness and tearing of the eyes. Inhalation of high vapour concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Prolonged contact may cause redness and irritation.

#### Acute toxicity

##### Numerical measures of toxicity

The following ATE values have been calculated for the mixture

ATEmix (oral)	>2000 mg/kg
ATEmix (dermal)	>2000 mg/kg
ATEmix (inhalation-gas)	>20000 ppm
ATEmix (inhalation-dust/mist)	51.70 mg/l
ATEmix (inhalation-vapour)	>20 mg/l

##### Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethyl acetate	=5620 mg/kg (Rattus)	> 18000 mg/kg (Oryctolagus cuniculus) > 20 mL/kg (Oryctolagus cuniculus)	LC0 29.3 mg/l air
4,4'-Methylenediphenyl diisocyanate	=31600 mg/kg (Rattus) = 9200 mg/kg (Rattus)	LD 50 > 9400 mg/kg (Oryctolagus cuniculus) OECD 402	1.5 mg/L (Rattus) 4 h

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes mild skin irritation.

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye irritation.

4,4'-Methylenediphenyl diisocyanate (101-68-8)					
Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit	Eye	0.1 mL	24 hours	Non-irritant

**Respiratory or skin sensitisation** May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

Component Information		
Ethyl acetate (141-78-6)		
Method	Species	Results
OECD Test No. 474: Mammalian Erythrocyte Micronucleus Test	in vivo Hamster	Negative
OECD Test No. 471: Bacterial Reverse Mutation Test	in vitro Salmonella typhimurium	Negative
OECD Test No. 473: In vitro Mammalian Chromosome Aberration Test	in vitro Hamster Ovary	Negative

**Carcinogenicity** Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component Information		
4,4'-Methylenediphenyl diisocyanate (101-68-8)		
Method	Species	Results
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Limited evidence of a carcinogenic effect

Chemical name	European Union
4,4'-Methylenediphenyl diisocyanate	Carc. 2

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**STOT - single exposure** May cause drowsiness or dizziness.

**STOT - repeated exposure** Based on available data, the classification criteria are not met.

**Aspiration hazard** Based on available data, the classification criteria are not met.

## 11.2. Information on other hazards

### 11.2.1. Endocrine disrupting properties

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

**Endocrine disrupting properties** Based on available data, the classification criteria are not met.

## 11.2.2. Other information

**Other adverse effects** No information available.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Ecotoxicity** Based on available data, the classification criteria are not met.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea	M-Factor	M-Factor (long-term)
Ethyl acetate 141-78-6	EC50: =3300mg/L (48h, Desmodesmus subspicatus)	LC50: =484mg/L (96h, Oncorhynchus mykiss) LC50: 352 - 500mg/L (96h, Oncorhynchus mykiss) LC50: 220 - 250mg/L (96h, Pimephales promelas)	EC50 = 1180 mg/L 5 min EC50 = 1500 mg/L 15 min EC50 = 5870 mg/L 15 min EC50 = 7400 mg/L 2 h	EC50: =560mg/L (48h, Daphnia magna)		
4,4'-Methylenediphenyl diisocyanate 101-68-8	ErC50 (72h) >1640 mg/L Algae (scenedesmus subspicatus) (OECD 201)	>1000 mg/l Danio rerio	-	EC50 (24H) >1000 mg/L Daphnia magna		

### 12.2. Persistence and degradability

**Persistence and degradability** No information available.

4,4'-Methylenediphenyl diisocyanate (101-68-8)			
Method	Exposure time	Value	Results
OECD Test No. 302C: Inherent Biodegradability: Modified MITI Test (II)	28 days	0% biodegradation	Not readily biodegradable

### 12.3. Bioaccumulative potential

#### Bioaccumulation

#### Component Information

Chemical name	Partition coefficient
Ethyl acetate	0.73
4,4'-Methylenediphenyl diisocyanate	4.51

### 12.4. Mobility in soil

**Mobility in soil** No information available.

### 12.5. Results of PBT and vPvB assessment

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

**PBT and vPvB assessment** Based on available data, the classification criteria are not met.

Chemical name	PBT and vPvB assessment
Ethyl acetate	Not PBT/vPvB
4,4'-Methylenediphenyl diisocyanate	Not PBT/vPvB

## 12.6. Endocrine disrupting properties

**Endocrine disrupting properties** Based on available data, the classification criteria are not met.

## 12.7. Other adverse effects

**Other adverse effects** No information available.

**PMT or vPvM properties** Based on available data, the classification criteria are not met.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Waste from residues/unused products** Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

**Waste codes / waste designations according to EWC** 16 05 05 gases in pressure containers other than those mentioned in 16 05 04. Waste codes should be assigned by the user based on the application for which the product was used.

**European Waste Catalogue** 08 04 09\* waste adhesives and sealants containing organic solvents or other dangerous substances  
15 01 10\*: Packaging containing residues of or contaminated by dangerous substances

**Other information** Waste codes should be assigned by the user based on the application for which the product was used.

## SECTION 14: Transport information

**Note:** The information shown here, may not always agree with the bill of lading shipping description for the material. Keep from freezing. The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments made in non-bulk packages (see regulatory definition).

### Land transport (ADR/RID)

**14.1 UN number or ID number** UN1133  
**14.2 UN proper shipping name** Adhesives  
**14.3 Transport hazard class(es)** 3  
**Labels** 3  
**14.4 Packing group** II  
**Description** UN1133, Adhesives, 3, II, (D/E)  
**14.5 Environmental hazards** No  
**14.6 Special precautions for user**  
**Special Provisions** 640D  
**Classification code** F1  
**Tunnel restriction code** (D/E)  
**Limited quantity (LQ)** 5 L  
**ADR Hazard Id (Kemmler)** 33

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

Number)

## IMDG

14.1 UN number or ID number UN1133  
14.2 UN proper shipping name Adhesives  
14.3 Transport hazard class(es) 3  
14.4 Packing group II  
Description UN1133, Adhesives, 3, II, (-5°C c.c.)  
14.5 Marine pollutant NP  
14.6 Special precautions for user  
Special Provisions None  
Limited Quantity (LQ) 5 L  
EmS-No. F-E, S-D  
14.7 Maritime transport in bulk according to IMO instruments  
Transport in bulk according to Annex II of MARPOL and the IBC Code Not applicable

## Air transport (ICAO-TI / IATA-DGR)

14.1 UN number or ID number UN1133  
14.2 UN proper shipping name Adhesives  
14.3 Transport hazard class(es) 3  
14.4 Packing group II  
Description UN1133, Adhesives, 3, II  
14.5 Environmental hazards No  
14.6 Special precautions for user  
Special Provisions A3  
Limited quantity (LQ) 1 L  
ERG Code 3L

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Check whether measures in accordance with Directive 94/33/EC for the protection of young people at work must be taken.

Take note of Directive 92/85/EC on the protection of pregnant and breastfeeding women at work

#### Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) Regulation (EC 1907/2006)

##### SVHC: Substances of Very High Concern for Authorisation:

This product does not contain candidate substances of very high concern at a concentration  $\geq 0.1\%$  (Regulation (EC) No. 1907/2006 (REACH), Article 59)

#### EU-REACH (1907/2006) - Annex XVII - Substances subject to Restriction

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

Chemical name	CAS No.	Restricted substance per REACH Annex XVII
4,4'-Methylenediphenyl diisocyanate	101-68-8	56[a] 75
Diisocyanates	--	74

56 . If product supplied to the general public with substance  $\geq 0.1\%$ , then gloves must be provided with the product. 74 If

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

product supplied to the industrial or professional users with total monomeric diisocyanates  $\geq 0.1\%$ , then its packaging must mention "As from 24 August 2023 adequate training is required before industrial or professional use".

## Substance subject to authorisation per REACH Annex XIV

This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV)

## Export Notification requirements

This product does not contain substances which are regulated pursuant to Regulation (EC) No. 649/2012 of the European parliament and of the council concerning the export and import of dangerous chemicals above the level that triggers a labeling obligation under Regulation (EC) No 1272/2008. Therefore this product is not subject to prior informed consent notification.

## Dangerous substance category per Seveso Directive (2012/18/EU)

P5a - FLAMMABLE LIQUIDS  
P5b - FLAMMABLE LIQUIDS  
P5c - FLAMMABLE LIQUIDS

## Ozone-depleting substances (ODS) regulation (EC) 2024/590

Not applicable

## Persistent Organic Pollutants

Not applicable

## REGULATION (EU) 2019/1148 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 20 June 2019 on the marketing and use of explosives precursors

Not applicable

## National regulations

### 15.2. Chemical safety assessment

Chemical Safety Assessments have been carried out by the Reach registrants for substances registered at >10 tpa. No Chemical Safety Assessment has been carried out for this mixture

## **SECTION 16: Other information**

### Key or legend to abbreviations and acronyms used in the safety data sheet

### Full text of any hazard and/or precautionary statements referred to under Sections 2-15

EUH066 - Repeated exposure may cause skin dryness or cracking  
H225 - Highly flammable liquid and vapour  
H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H319 - Causes serious eye irritation  
H332 - Harmful if inhaled  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness  
H351 - Suspected of causing cancer  
H373 - May cause damage to organs through prolonged or repeated exposure

### Notes relating to the identification, classification and labelling of substances

Note C - Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers

### Notes relating to the classification and labelling of mixtures

Note 2 - The concentration of isocyanate stated is the percentage by weight of the free monomer calculated with reference to the total weight of the mixture

### Legend

TWA TWA (time-weighted average)

# SAFETY DATA SHEET

HCP-X 160  
Supersedes date 07-Apr-2023

Revision date 26-May-2025  
Revision Number 5

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STEL	STEL (Short Term Exposure Limit)
Ceiling	Ceiling Limit Value
Sk*	Skin designation
SVHC	Substance(s) of Very High Concern
PBT	Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
vPvB	Very Persistent and very Bioaccumulative (vPvB) Chemicals
STOT RE	Specific target organ toxicity - Repeated exposure
STOT SE	Specific target organ toxicity - Single exposure
EWC	European Waste Catalogue
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG	International Maritime Dangerous Goods (IMDG)
IATA	International Air Transport Association (IATA)
RID	Regulations concerning the International Transport of Dangerous Goods by Rail

## Key literature references and sources for data

No information available

<b>Prepared By</b>	Product Safety & Regulatory Affairs
<b>Revision date</b>	26-May-2025
<b>Indication of changes</b>	

<b>Revision Note</b>	First time release.
<b>Training Advice</b>	AS FROM 24 AUGUST 2023 ADEQUATE TRAINING IS REQUIRED BEFORE INDUSTRIAL OR PROFESSIONAL USE For further information, please contact: <a href="https://www.safeusediisocyanates.eu/">https://www.safeusediisocyanates.eu/</a>
<b>Further information</b>	No information available

**This SDS complies with the requirements of UK REACH Regulations SI 2019/758 (as amended)**

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**