

Safety Data Sheet

according to HPR, Schedule 1

Printing date 02/14/2023

Version 3.0

Reviewed on 08/17/2022

1 Identification

Product identifier
Trade name: **2K Wood Oil**
Article number: 6100 Clear; 6111 White; 6112 Silver Grey; 6114 Graphite; 6118 Light Grey; 6116 Cherry; 6119 Natural; 6141 Havanna; 6143 Cognac; 6164 Tobacco; 6190 Black

Application of the substance / the mixture

 Paint
 Coating compound/ Surface coating/ paint

Uses advised against Do not use without the associated hardener.

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Supplier Osmo Wood and Colour Canada Ltd.
 8812 51 Ave NW
 Edmonton AB T6E 5E8
 Canada
 Tel: +1-844-OSMOCAN
 E-mail: info@osmo.ca

Manufacturer Osmo Holz und Color GmbH & Co. KG
 Affhüppen Esch 12
 D-48231 Warendorf

Information department: Product safety department
 Tel.: +49 (0) 251 / 692 - 188
 Fax: +49 (0) 251 / 692 - 462
 e-mail: helmut.starp@osmo.de

Emergency telephone number: 24h-Emergency Phone Number:
 For Chemical Emergency, Spill; Leak; Fire Exposure or Accident Call Day or Night within USA and Canada 1-800-424-9300
 Outside USA and Canada 001-703-527-3887 (CCN 16475)

2 Hazard identification

Classification of the substance or mixture

The product is not classified, according to the Globally Harmonized System (GHS).

Additional information: For the wording of the listed hazard phrases refer to section 16.

Label elements
Hazard pictograms Void

Signal word Void

Hazard statements Void

Precautionary statements P101 If medical advice is needed, have product container or label at hand.
 P102 Keep out of reach of children.

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P262 Do not get in eyes, on skin, or on clothing.
 P271 Use only outdoors or in a well-ventilated area.

Classification system:**NFPA ratings (scale 0 - 4)**

Health = 0
 Fire = 1
 Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0
 Fire = 1
 Reactivity = 0

Other hazards


CAUTION: Rags, steel wool or waste soaked with this product may spontaneously catch fire if improperly discarded. Immediately after use, place rags, steel wool or waste in a sealed water filled metal container to prevent this.
 Always wear a dust mask when sanding.
 Observe the general safety regulations when handling chemicals.

3 Composition/Information on ingredients

Chemical characterization: Mixtures

Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:

64742-48-9	aliphatic hydrocarbons, C10-C13	1-5% w/w
	 Aspiration Hazard - Category 1, H304; Flammable Liquids - Category 4, H227	

4 First-aid measures

Description of first aid measures**General information:**

No special measures required.

After inhalation:

Supply fresh air; consult doctor in case of complaints.

After skin contact:

Immediately rinse with water.
 Immediately wash with water and soap and rinse thoroughly.
 If skin irritation or rash occurs: Get medical advice/attention.

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.

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Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

Use fire fighting measures that suit the environment.

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 clothing.

Environmental precautions:

Inform respective authorities in case of seepage into water course or sewage system.

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).

Dispose of the collected material according to regulations.

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.

7 Handling and storage

Handling:

Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

General protective and hygienic measures:

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

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Do not eat, drink, smoke or sniff while working.

Do not carry product impregnated cleaning cloths in trouser pockets.

Information about protection**against explosions and fires:** Keep respiratory protective device available.**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.

Store in cool, dry conditions in well sealed receptacles.

Storage class:

10

Specific end use(s)

No further relevant information available.

8 Exposure controls/ Personal protection

Control parameters**Components with limit values****that require monitoring at the****workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

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.

Avoid contact with the eyes and skin.

Immediately remove all soiled and contaminated clothing.

Do not inhale gases / fumes / aerosols.

The usual precautionary measures for handling chemicals should be followed.

Do not eat, drink, smoke or sniff while working.

See Section 7 for information on safe handling.

Breathing equipment:

Use suitable respiratory protective device only when aerosol or mist is formed.

Not necessary if room is well-ventilated.

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.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Protection of hands:

To avoid skin problems reduce the wearing of gloves to the required minimum.

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Material of gloves	Protective gloves The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation 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.
As protection from splashes gloves made of the following materials are suitable:	Nitrile rubber, NBR
Eye protection:	Tightly sealed goggles
Body protection:	Protective work clothing

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form:	Fluid
Color:	According to product specification
Odor:	Mild
Odor threshold:	Not determined.

pH-value: Mixture is non-polar/aprotic.

Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	>300 °C

Flash point: > 100 °C (DIN EN ISO 2719)

Flammability (solid, gaseous): Not applicable.

Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: Not determined.

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Upper:	Not determined.
Vapor pressure at 100 °C:	≤1 hPa
Density at 20 °C:	0.94-1.20 g/cm ³ (DIN 51757)
Relative 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 at 20 °C:	40-140 s (DIN EN ISO 2431/4mm) >21 mm ² /s (40°C) (calculated)
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 and stored 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 hazardous decomposition products when stored and handled correctly.

11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

64742-48-9 aliphatic hydrocarbons, C10-C13

Oral	LD50	>5,000 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (rat)
Inhalative	LC50 / 4h	>5 mg/l (rat)

Primary irritant effect:

on the skin:	No irritant effect. Based on available data, the classification criteria are not met.
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on the eye: No irritating effect.
Based on available data, the classification criteria are not met.

Sensitization: No sensitizing effects known.

Additional toxicological information: The product is not subject to classification according to internally approved calculation methods for preparations:

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.

12 Ecological information

Toxicity

Aquatic toxicity:

64742-48-9 aliphatic hydrocarbons, C10-C13

EC50 / 48h >1,000 mg/l (Daphnia magna)

IC50 / 72h >1,000 mg/l (algae)

LC50 / 96h >1,000 mg/l (fish)

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
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.
Disposal must be made according to official regulations.

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Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number <i>DOT/TDG, ADR, IMDG, IATA</i>	Not applicable
UN proper shipping name <i>DOT/TDG, ADR, IMDG, IATA</i>	Not applicable
Transport hazard class(es) <i>DOT, ADR, ADN, IMDG, IATA</i> Class	Not applicable
Packing group <i>DOT/TDG, ADR, IMDG, IATA</i>	Not applicable
Environmental hazards:	Not applicable.
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	Not applicable

15 Regulatory information

Safety, health and environmental regulations/ legislation specific for the substance or mixture
Sara

No further relevant information available.

Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

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Canadian substance listings:
Canadian Domestic Substances List (DSL)

All ingredients are listed.

Canadian Non-Domestic Substances List (NDSL)

None of the ingredients is listed.

Canadian Ingredient Disclosure list (limit 0.1%)

None of the ingredients is listed.

Canadian Ingredient Disclosure list (limit 1%)

8001-26-1 | Linseed oil

GHS label elements

Void

Hazard pictograms

Void

Signal word

Void

Hazard statements

Void

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.
 P102 Keep out of reach of children.
 P262 Do not get in eyes, on skin, or on clothing.
 P271 Use only outdoors or in a well-ventilated area.

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.

Relevant phrases

H227 Combustible liquid.
 H304 May be fatal if swallowed and enters airways.

Department issuing SDS:

product safety department

Contact:

Hr. Dr. Starp

Date of the latest revision of the safety data sheet

02/14/2023

Abbreviations and acronyms:

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)
 HMIS: Hazardous Materials Identification System (USA)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative

Sources

ESIS : European chemical Substances Information System
 ECHA Portal
 Safety data sheets from raw material suppliers

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

Additions, deletions, revisions

CA

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1 Identification

Product identifier
Trade name: Hardener for 2K Wood Oil (6633)

Article number: 6633

CAS Number: 28182-81-2

NLP Number: 500-060-2

Application of the substance
/ the mixture Hardening agent/ Curing agent

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Supplier

 Osmo Wood and Colour Canada Ltd.
 8812 51 Ave NW
 Edmonton AB T6E 5E8
 Canada
 Tel: +1-844-OSMOCAN
 E-mail: info@osmo.ca

Manufacturer

 Osmo Holz und Color GmbH & Co. KG
 Affhüppen Esch 12
 D-48231 Warendorf

Information department:

 Product safety department
 Tel.: +49 (0) 251 / 692 - 188
 Fax: +49 (0) 251 / 692 - 462
 e-mail: helmut.starp@osmo.de

Emergency telephone
number:

 24h-Emergency Phone Number:
 For Chemical Emergency, Spill; Leak; Fire Exposure or Accident Call Day or
 Night within USA and Canada 1-800-424-9300
 Outside USA and Canada 001-703-527-3887 (CCN 16475)

2 Hazard identification

Classification of the substance or mixture

Acute Toxicity (Inhalation) - Category 4

H332 Harmful if inhaled.

Skin Sensitizer - Category 1

H317 May cause an allergic skin reaction.

 Specific Target Organ Toxicity - Single Exposure -
 Category 3

H335 May cause respiratory irritation.

Additional information:

For the wording of the listed hazard phrases refer to section 16.

Label elements
Hazard pictograms


GHS07

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Trade name: Hardener for 2K Wood Oil (6633)

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Signal word

Warning

Hazard-determining**components of labeling:**

Hexamethylene diisocyanate, oligomers

Hazard statements

H332 Harmful if inhaled.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

Precautionary statements

P260 Do not breathe vapours.

P262 Do not get in eyes, on skin, or on clothing.

P271 Use only outdoors or in a well-ventilated area.

P301 IF SWALLOWED:

P331 Do NOT induce vomiting.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately. Call a Poison Centre.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container in accordance with national regulations.

Classification system:**NFPA ratings (scale 0 - 4)**

Health = 0

Fire = 1

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 1

Fire = 1

Reactivity = 0

Other hazards

Always wear a dust mask when sanding.

Observe the general safety regulations when handling chemicals.

3 Composition/Information on ingredients




Chemical characterization: Substances**CAS No. Description**

28182-81-2 Hexamethylene diisocyanate, oligomers

Identification number(s)**NLP Number:**

500-060-2

Impurities and stabilising additives:

Impurities	Stabilising additives	Concentration
822-06-0	hexamethylene-di-isocyanate	<0.1% w/w
<p>  Acute Toxicity (Dermal) – Category 3, H311; Acute Toxicity (Inhalation) - Category 3, H331;  Respiratory Sensitizer - Category 1, H334;  Acute Toxicity (Oral) - Category 4, H302; Skin Irritation - Category 2, H315; Eye Irritation - Category 2A, H319; Skin Sensitizer - Category 1, H317; Specific Target Organ Toxicity - Single Exposure - Category 3, H335 Specific concentration limits: Respiratory Sensitizer - Category 1; H334: C ≥ 0.5 % Skin Sensitizer - Category 1; H317: C ≥ 0.5 % </p>		

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Description: Substance

4 First-aid measures

Description of first aid measures

General information:	Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
After inhalation:	Take affected persons into fresh air and keep quiet. Seek medical treatment in case of complaints. 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. If skin irritation continues, consult a doctor. If skin irritation or rash occurs: Get medical advice/attention.
After eye contact:	Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
After swallowing:	Rinse mouth. Seek medical treatment.
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 ₂ , extinguishing powder or water spray. Fight larger fires with water spray. Use fire fighting measures that suit the environment.
For safety reasons unsuitable extinguishing agents:	Water with full jet
Special hazards arising from the substance or mixture	Isocyanate vapors Nitrogen oxides (NO _x) (Traces) Hydrogen cyanide (HCN)
Advice for firefighters	
Protective equipment:	Wear fully protective suit. Mouth respiratory protective device.

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Additional information

Collect contaminated fire fighting water separately. It must not enter the sewage system.
Cool endangered receptacles with water spray.

6 Accidental release measures

Personal precautions,**protective equipment and****emergency procedures**

Wear protective clothing.

Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

Methods and material for**containment and cleaning up:**

Remove mechanically; cover residues with moist, liquid-binding material (e.g. sawdust, calcium silicate hydrate-based chemical binder, sand). After about 1 hour, take up in waste container, do not close (CO₂ evolution!). Keep moist and leave in a safe place outdoors for several days.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).

Dispose of the collected material according to regulations.

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.

7 Handling and storage

Handling:**Precautions for safe handling**

Spraying requires the extraction of air.

The air limit values mentioned in Chapter 8 must be observed. In workplaces where aerosols and/or vapours of isocyanates may occur in higher concentrations, targeted air pollution control must be used to avoid exceeding the occupational hygiene limit value. Air movement must be kept away from people.

The personal protection measures described in Chapter 8 must be followed.

When handling isocyanates, the required protective measures must be observed. Avoid contact with skin and eyes and inhalation of vapours.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Avoid contact with skin and eyes.

General protective and**hygienic measures:**

Be sure to clean skin thoroughly after work and before breaks.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

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Avoid contact with the eyes and skin.
 Do not eat, drink, smoke or sniff while working.
 Do not carry product impregnated cleaning cloths in trouser pockets.

Information about protection

against explosions and fires: Fumes can combine with air to form an explosive mixture.

Conditions for safe storage, including any incompatibilities**Storage:****Requirements to be met by**

storerooms and receptacles: Prevent any seepage into the ground.
 Store only in the original receptacle.

Information about storage in

one common storage facility: Store away from foodstuffs.

Further information about**storage conditions:**

Store receptacle in a well ventilated area.
 Store in dry conditions.
 Keep receptacle tightly sealed.
 Store in cool, dry conditions in well sealed receptacles.

Storage class:

TRGS 510 storage class: 12 non-flammable liquids that can not be assigned to any other storage class.

10

Specific end use(s)

No further relevant information available.

8 Exposure controls/ Personal protection

Control parameters**Components with limit values that require monitoring at the workplace:****822-06-0 hexamethylene-di-isocyanate (<0.1%)**

EV (Canada)	TWA: 0.005 ppm Ceiling: 0.02 ppm
TWA (Canada)	TWA: 0.005 ppm Ceiling: 0.01 ppm S(R)
REL (USA)	TWA: 0.035 mg/m ³ , 0.005 ppm Ceiling: 0.14* mg/m ³ , 0.02* ppm *10-min
TLV (USA)	TWA: 0.005 ppm BEI

Additional information: The lists that were valid during the creation were used as basis.

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Exposure controls**Personal protective equipment:****General protective and hygienic measures:**

Wash hands before breaks and at the end of work.
 Keep away from foodstuffs, beverages and feed.
 Avoid contact with the eyes and skin.
 Immediately remove all soiled and contaminated clothing.
 The usual precautionary measures for handling chemicals should be followed.
 Store protective clothing separately.
 Do not eat, drink, smoke or sniff while working.
 See Section 7 for information on safe handling.

Breathing equipment:

In the case of respiratory and skin hypersensitivity (asthma, chronic bronchitis, chronic skin diseases), handling of the product is not recommended.
 Not necessary if room is well-ventilated.

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.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

Butyl rubber, BR

Fluorocarbon rubber (Viton)

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.

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.

For the permanent contact gloves made of the following materials are suitable:

chemical resistant gloves (EN 374)

Butyl rubber, BR

Not suitable are gloves made of the following materials:

Nitrile rubber, NBR

Eye protection:

Face protection

Schutzbrille mit Seitenschutz (Gestellbrille) (z.B. EN 166)

Body protection:

Use protective suit.

Protective work clothing

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9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form:	Fluid
Color:	Colorless
Odor:	Nearly odorless
Odor threshold:	Not determined.

pH-value:	Not applicable Mixture is non-polar/aprotic.
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Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Not applicable

Flash point:	~158 °C (DIN 53213, 28182-81-2 Hexamethylene diisocyanate, oligomers)
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Flammability (solid, gaseous):	Not applicable.
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Ignition temperature:	~445 °C (DIN 51794, 28182-81-2 Hexamethylene diisocyanate, oligomers)
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Decomposition temperature:	Not determined.
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Auto igniting:	Not determined.
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Danger of explosion:	Product does not present an explosion hazard.
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Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

Vapor pressure at 20 °C:	<0.00003 hPa (EG A4, 28182-81-2 Hexamethylene diisocyanate, oligomers)
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Density at 20 °C:	~1.17 g/cm ³ (DIN 53217)
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Relative density	Not determined.
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Evaporation rate	Not determined.
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Solubility in / Miscibility with

Water:	Not miscible or difficult to mix.
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Partition coefficient (n-octanol/water):	Not determined.
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Viscosity:

Dynamic at 20 °C:	~1,200 mPas (DIN EN ISO 3219/A.3)
Kinematic:	Not determined.

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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 and stored according to specifications.
Possibility of hazardous reactions	<ul style="list-style-type: none"> Reacts with alcohols. Reacts with amines. Decomposes with water, acids and alkalis. Exothermic reaction. Danger of bursting.
Conditions to avoid	No further relevant information available.
Incompatible materials:	No further relevant information available.
Hazardous decomposition products:	No hazardous decomposition products when stored and handled correctly.

11 Toxicological information**Information on toxicological effects****Acute toxicity:****LD/LC50 values that are relevant for classification:**

Inhalative	ATE-Wert (Nebel)	1.5 mg/l (rat)
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28182-81-2 Hexamethylene diisocyanate, oligomers

Oral	LD50	>2,500 mg/kg (rat) (OECD 423)
Dermal	LD50	>2,000 mg/kg (rat) (Acute Dermal Toxicity)
Inhalative	LC50 / 4h	11 mg/l (ATE)

Primary irritant effect:**on the skin:****28182-81-2 Hexamethylene diisocyanate, oligomers**

Dermal	Skin irritation	(rabbit) (OECD- Prüfrichtlinie 404)
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on the eye:**28182-81-2 Hexamethylene diisocyanate, oligomers**

Eye irritation	(rabbit)
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Sensitization: May cause an allergic skin reaction.

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28182-81-2 Hexamethylene diisocyanate, oligomers

Inhalative	Sensibilisierung	(mouse) (Lokaler Lymphknoten-Test (LLNA))
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Other information (about experimental toxicology):

Animal tests and other research indicate that skin contact with diisocyanates can play a role in causing isocyanate sensitization and respiratory reaction.

Subacute to chronic toxicity:
28182-81-2 Hexamethylene diisocyanate, oligomers

NOAEL	3.3 mg/Tag /inhalativ (rat)
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Additional toxicological information:

Special properties/effects: Over-exposure, especially when spraying coatings containing isocyanate without the necessary precautions, entails the risk of concentration-dependent irritating effects on eyes, nose throat, and respiratory tract. Delayed appearance of the complaints and development of hypersensitivity (difficult breathing, coughing, asthma) are possible. Hypersensitive persons may suffer from these effects even at low isocyanate concentrations, including concentrations below the UK Workplace Exposure Limit (WEL). Prolonged contact with the skin may cause tanning and irritant effects.

May cause an allergic skin reaction.

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.

12 Ecological information

Toxicity
Aquatic toxicity: Do not allow product to reach ground water, water course or sewage system.

28182-81-2 Hexamethylene diisocyanate, oligomers

EC50 / 48h	>100 mg/l (Daphnia magna) (OECD- Prüfrichtlinie 202)
IC50 / 72h	>1,000 mg/l (algae) (DIN 38412)
LC50 / 96h	>100 mg/l (Brachydanio rerio) (OECD- Prüfrichtlinie 203)
Biolog. Abbaubarkeit	28 % (OECD Guideline for Testing of Chemicals, No.301 D)
Biokonz.-Faktor	3.2 /(berechnet)

Persistence and degradability Not easily biodegradable

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Behavior in environmental systems:**Bioaccumulative potential****28182-81-2 Hexamethylene diisocyanate, oligomers**

log POW | ~8.38 (Wert berechnet)

Mobility in soil No further relevant information available.**Ecotoxicological effects:****Behavior in sewage processing plants:****28182-81-2 Hexamethylene diisocyanate, oligomers**

EC0 / 3h | >100 mg/l (Daphnia magna)

EC50 | 3,828 mg/l (activated sludge organism) (OECD Guideline for Testing of Chemicals, No.209)

Additional ecological information:**General notes:**

The resin reacts with water at the interface forming CO₂ and a solid insoluble product with high melting point (polyurea). This reaction is accelerated by surfactants (e.g. detergents) or by watersoluble solvents. Previous experience shows that polyurea is inert and non-degradable.

Water hazard class 1 (Assessment by list): slightly hazardous for water

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.
Disposal must be made according to official regulations.

Uncleaned packagings:**Recommendation:**

Waste treatment methods:

After final product withdrawal, all residues must be removed from containers (drip-free, powderfree or paste-free). Once the product residues adhering to the walls of the containers have been rendered harmless, the product and hazard labels must be invalidated. These containers can be returned for recycling to the appropriate centres set up within the framework of the existing takeback scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

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14 Transport information

UN-Number <i>DOT/TDG, ADR, ADN, IMDG, IATA</i>	Not applicable
UN proper shipping name <i>DOT/TDG, ADR, ADN, IMDG, IATA</i>	Not applicable
Transport hazard class(es) <i>DOT, ADR, ADN, IMDG, IATA</i> Class	Not applicable
Packing group <i>DOT/TDG, ADR, IMDG, IATA</i>	Not applicable
Environmental hazards: Marine pollutant:	No
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	Special precautions for user : Not dangerous cargo. Slight smell. Keep dry. Avoid heat above +50 °C. Keep away from foodstuffs, acids and alkalis.
UN "Model Regulation":	Not applicable

15 Regulatory information

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

Canadian substance listings:
Canadian Domestic Substances List (DSL)

All ingredients are listed.

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Canadian Non-Domestic Substances List (NDSL)
None of the ingredients is listed.
Canadian Ingredient Disclosure list (limit 0.1%)
None of the ingredients is listed.
Canadian Ingredient Disclosure list (limit 1%)
None of the ingredients is listed.

GHS label elements The substance is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms

GHS07

Signal word

Warning

Hazard-determining**components of labeling:**

Hexamethylene diisocyanate, oligomers

Hazard statements

H332 Harmful if inhaled.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

Precautionary statements

P260 Do not breathe vapours.

P262 Do not get in eyes, on skin, or on clothing.

P271 Use only outdoors or in a well-ventilated area.

P301 IF SWALLOWED:

P331 Do NOT induce vomiting.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately. Call a Poison Centre.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container in accordance with national regulations.

National regulations:
**Other regulations, limitations
and prohibitive regulations**

Other regulations: The European Committee of Paint, Printing Ink and Artists' Colours Manufacturers' Associations (CEPE) provides the following information on coatings containing isocyanates: Ready-to-use paints containing isocyanates may have an irritant effect on mucous membranes - especially on breathing organs - and cause hypersensitivity reactions. Inhalation of vapor or spray mist may cause sensitisation. When handling paints containing isocyanates all precautions required for solvent-containing paints must be followed. Vapor and spray mist in particular should not be inhaled. Allergics and asthmatics as well as people prone to respiratory ailments should not work with isocyanate containing paints.

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Chemical safety assessment: A Chemical Safety Assessment has 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.

Relevant phrases

H302 Harmful if swallowed.
 H311 Toxic in contact with skin.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H319 Causes serious eye irritation.
 H331 Toxic if inhaled.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 May cause respiratory irritation.

Recommended restriction of use

The product is used as a hardener in coating materials. Appropriate protective measures are required to deal with coating materials that contain reactive polyisocyanates and residual monomeric HDI (see also this safety data sheet). They may therefore only be used in industrial or professional applications. They are not suitable for use in do-it-yourself applications.

Department issuing SDS:

product safety department

Contact:

Hr. Dr. Starp

Date of the latest revision of the safety data sheet

02/14/2023

Abbreviations and acronyms:

ICAO: International Civil Aviation Organisation
 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
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative

Sources

ESIS : European chemical Substances Information System
 ECHA Portal
 Safety data sheets from raw material suppliers

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

Additions, deletions, revisions