

Fireshield, a division of Fire Protection Coatings Limited
8013 Christchurch

Date printed 04.07.2023, Revision 05.12.2022

Version 4.0

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

1.1 Product identifier

HENSOTOP 2K PU Hardener

IUPAC HDI-Oligomere, Iminoaxadiazindion
EINECS/ELINCS 931-297-3

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

1.2.1 Relevant uses

Top coat

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the safety data sheet

Company Fireshield, a division of Fire Protection Coatings Limited
Level 1, 60 Cashel Street
8013 Christchurch / NEW ZEALAND
Phone 0800 FIRESHIELD (0800 347374)
Homepage www.fireshieldcoatings.com
E-mail info@fireshieldcoatings.com

Address enquiries to

Technical information info@fireshieldcoatings.com

Safety Data Sheet sdb@chemiebuero.de (No dispatch of safety data sheets)
Safety data sheets are available from the supplier.

1.4 Emergency telephone number

Advisory body National Poison Centre (New Zealand): 0800 764 766 (24 hours)

SECTION 2: Hazards identification

Approval This product is considered to be a hazardous substance to the Hazardous Substances and New Organisms Act (HSNO).

Hazard classifications skin sensitisation Category 1
acute inhalation toxicity Category 4
specific target organ toxicity - single exposure Category 3

Hazard pictograms



Signal word WARNING

Hazard statements H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Precautionary statements P261 Avoid breathing vapours.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P333+P313 If skin irritation or rash occurs: Get medical advice / attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P312 Call a POISON CENTER / doctor if you feel unwell.

Other Classifications

EUH204 Contains isocyanates. May produce an allergic reaction.

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SECTION 3: Composition / Information on ingredients

3.1 Substances

The product is a substance.

Range [%]	Substance
~ 100	HDI-Oligomere, Iminooxidiazindion
<0.1	Hexamethylene-diisocyanate
	CAS: 822-06-0

Comment on component parts

For full text of H-statements: see SECTION 16.

3.2 Mixtures

not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Take off contaminated clothing and wash before reuse.

Inhalation

Remove the victim into fresh air and keep him calm.
In the event of symptoms seek medical treatment.

Skin contact

In case of contact with skin wash off immediately with soap and water.
Consult a doctor if skin irritation persists.

Eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Ingestion

Consult a doctor immediately.
Do not induce vomiting.
Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects
Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray jet.
Carbon dioxide.
Foam.
Dry powder.

Extinguishing media that must not be used

Full water jet.

5.2 Special hazards arising from the substance or mixture

In the event of fire the following can be released:
Carbon monoxide (CO)
Nitrogen oxides (NOx).
Hydrogen cyanide (HCN).

5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

Collect contaminated firefighting water separately, must not be discharged into the drains.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment (protective gloves, safety glasses, protective clothing).
Ensure adequate ventilation.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.
In case the product spills into drains/surface waters/groundwater, immediately inform the authorities.

6.3 Methods and material for containment and cleaning up

Take up mechanically.
Take up residues with absorbent material (e.g. sand, sawdust, general purpose binder, diatomaceous earth).
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide suitable vacuuming at the processing machines and in the processing area.

Do not eat, drink, smoke or take drugs at work.
Take off contaminated clothing and wash before reuse.
After worktime and before work breaks the affected skin areas must be thoroughly cleaned.
Use barrier skin cream.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.
Prevent penetration into the ground.
Do not store together with food and animal food/diet.
Keep container tightly closed.
Keep container in a well-ventilated place.
Keep in a cool place. Store in a dry place.

7.3 Specific end use(s)

See product use, SECTION 1.2

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SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (NZ)

not applicable

DNEL

Substance
Hexamethylene-diisocyanate, CAS: 822-06-0
Industrial, inhalative, Long-term - local effects, 0.035 mg/m ³
Industrial, inhalative, Acute - local effects, 0.07 mg/m ³
HDI-Oligomere, Iminooxadiazindion
Industrial, inhalative, Long-term - local effects, 0.5 mg/m ³
Industrial, inhalative, Acute - local effects, 1 mg/m ³

PNEC

Substance
Hexamethylene-diisocyanate, CAS: 822-06-0
soil, 0.523 mg/kg soil dw
sediment (seawater), 0.067 mg/kg sediment dw
sediment (freshwater), 0.674 mg/kg sediment dw
seawater, 0.005 mg/L
freshwater, 0.049 mg/L
sewage treatment plants (STP), 8.42 mg/l
HDI-Oligomere, Iminooxadiazindion
sewage treatment plants (STP), 100 mg/l
soil, 505 mg/kg
sediment (seawater), 253 mg/kg
sediment (freshwater), 2530 mg/kg
seawater, 0.01 mg/L
freshwater, 0.1 mg/L

8.2 Exposure controls

Additional advice on system design	Ensure adequate ventilation on workstation. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
Eye protection	Safety glasses. (EN 166:2001)
Hand protection	0.5mm Butyl rubber, >480 min (EN 374-1/-2/-3). The details concerned are recommendations. Please contact the glove supplier for further information.
Skin protection	Protective clothing (EN 340)
Other	Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Respiratory protection	In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection. Short term: filter apparatus, combination filter A-P2. (DIN EN 14387)
Thermal hazards	none
Delimitation and monitoring of the environmental exposition	Protect the environment by applying appropriate control measures to prevent or limit emissions.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Form	liquid
Color	colourless
Odor	faintly
Odour threshold	not determined
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	not determined
Flash point [°C]	203
Flammability	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	< 0.000001 (20°C)
Density [g/cm ³]	1.15 (20 °C / 68,0 °F)
Relative density	not determined
Bulk density [kg/m ³]	not applicable
Solubility in water	insoluble reacts with water
Solubility other solvents	No information available.
Partition coefficient [n-octanol/water]	ca. 8.38
Kinematic viscosity	ca. 958 mPa.s (20°C)
Relative vapour density	not applicable
Evaporation speed	not applicable
Melting point [°C]	not determined
Auto-ignition temperature [°C]	ca. 440
Decomposition temperature [°C]	ca. 150
Particle characteristics	not applicable

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

Reactions with water, with formation of carbon dioxide.

10.4 Conditions to avoid

See SECTION 7

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10.5 Incompatible materials

Water.

10.6 Hazardous decomposition products

No hazardous decomposition products known.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

Product
ATE-mix, oral, > 2000 mg/kg
Substance
Hexamethylene-diisocyanate, CAS: 822-06-0
LD50, oral, Rat, 746 mg/kg bw
HDI-Oligomere, Iminooxadiazindion
LD50, oral, Rat, > 2000 mg/kg (OECD 423)

Acute dermal toxicity

Product
ATE-mix, dermal, > 2000 mg/kg
Substance
Hexamethylene-diisocyanate, CAS: 822-06-0
LD50, dermal, Rat, > 7000 mg/kg bw
HDI-Oligomere, Iminooxadiazindion
LD50, dermal, Rat, > 2000 mg/kg (OECD 402)
LD50, dermal, Rabbit, > 2000 mg/kg

Acute inhalational toxicity

Product
ATE-mix, inhalativ (mist), 1 - <5 mg/l 4h
Substance
Hexamethylene-diisocyanate, CAS: 822-06-0
LC50, inhalative, Rat, 0.124 mg/l 4h
NOAEL, inhalative, Rat, < 0.055 mg/l
HDI-Oligomere, Iminooxadiazindion
LC50, inhalative, Rat (female), 0.390 mg/l/4h (OECD 403)
Conversion value, inhalativ (mist), 1.5 mg/l/4h

Serious eye damage/irritation Non-corrosive / non-irritating.

Substance
Hexamethylene-diisocyanate, CAS: 822-06-0
Eye, irritant
HDI-Oligomere, Iminooxadiazindion
Eye, non-irritating

Skin corrosion/irritation Non-corrosive / non-irritating.

Substance
Hexamethylene-diisocyanate, CAS: 822-06-0
dermal, irritant
HDI-Oligomere, Iminooxadiazindion

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dermal, non-irritating

Respiratory or skin sensitisation May cause an allergic skin reaction.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

inhalative, sensitising

dermal, sensitising

HDI-Oligomere, Iminoxadiazindion

dermal, sensitising

Specific target organ toxicity — single exposure May cause respiratory irritation.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

inhalative, irritant

HDI-Oligomere, Iminoxadiazindion

inhalative, irritant

Specific target organ toxicity — repeated exposure No classification.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

NOAEC, oral, Rat, 35 µg/m³ (chronic), The effects observed are not sufficient for classification.

HDI-Oligomere, Iminoxadiazindion

NOAEC, oral, Rat, 3.3 mg/m³ (subchronic), The effects observed are not sufficient for classification.

Mutagenicity There is no evidence of any mutagenic effects.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

in vivo, no adverse effect observed

in vitro, no adverse effect observed

Reproduction toxicity There is no evidence of any reproductive toxicity effects.

- Fertility

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

NOAEC, inhalative, Rat, 2.03 mg/m³ (subchronic), no adverse effect observed

- Development

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

NOAEC, inhalative, Rat, 2.03 mg/m³ (subchronic), no adverse effect observed

Carcinogenicity There is no evidence of any carcinogenic effects.

Substance

Hexamethylene-diisocyanate, CAS: 822-06-0

NOAEC, inhalative, Rat, 1.15 mg/m³ (chronic), no adverse effect observed

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Aspiration hazard No classification.

General remarks
none

SECTION 12: Ecological information

12.1 Toxicity

Product
Based on the available information, the classification criteria are not fulfilled.
Substance
Hexamethylene-diisocyanate, CAS: 822-06-0
EC50, (72h), <i>Desmodesmus subspicatus</i> , > 77.4 mg/l (IUCLID)
LC0, (96h), <i>Brachidanio rerio</i> , > 82.8 mg/l (IUCLID)
HDI-Oligomere, Iminoaxadiazindion
EC50, (3h), Bacteria, > 10 000 mg/L
EL0, (48h), <i>Daphnia magna</i> , >= 100 mg/L
LL50, (96h), <i>Danio rerio</i> , > 100 mg/L
Erl50, (72h), <i>Desmodesmus subspicatus</i> , 199 mg/L

12.2 Persistence and degradability

Behaviour in environment compartments not determined

Behaviour in sewage plant not determined

Biological degradability not determined

12.3 Bioaccumulative potential

Accumulation in organisms is not expected.

12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

12.7 Other adverse effects

None known.

SECTION 13: Disposal considerations

Restrictions	There are no product-specific restrictions. However, state and local disposal regulations may apply.
Disposal method	Disposal of this product must comply with the requirements of state and local disposal regulations.
Contaminated packaging	Rinse containers with water before disposal. Preferably re-cycle container, otherwise send to landfill or similar.

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SECTION 14: Transport information

14.1 UN number

Transport by land according to ADR/RID not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with IMDG not applicable

Air transport in accordance with IATA not applicable

14.2 UN proper shipping name

Transport by land according to ADR/RID NO DANGEROUS GOODS

Inland navigation (ADN) NO DANGEROUS GOODS

Marine transport in accordance with IMDG NOT CLASSIFIED AS "DANGEROUS GOODS"

Air transport in accordance with IATA NOT CLASSIFIED AS "DANGEROUS GOODS"

14.3 Transport hazard class(es)

Transport by land according to ADR/RID not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with IMDG not applicable

Air transport in accordance with IATA not applicable

14.4 Packing group

Transport by land according to ADR/RID not applicable

Inland navigation (ADN) not applicable

Marine transport in accordance with IMDG not applicable

Air transport in accordance with IATA not applicable

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14.5 Environmental hazards

Transport by land according to ADR/RID no

Inland navigation (ADN) no

Marine transport in accordance with IMDG no

Air transport in accordance with IATA no

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

SECTION 15: Regulatory information

This product is considered to be a hazardous substance to the Hazardous Substances and New Organisms Act (HSNO).

Specific Workplace Controls (as per HSNO approval referenced to Controls Matrix)

Key workplace requirements are:

MSDS	The content and format of this Safety-Data-Sheet is in accordance with HSNO Approved Code of Practice.
Labelling	No removal of labels and/or decanting of product into other containers can occur.
Emergency plan	No information available.
Approved handler	No information available.
Tracking	No information available.
Bunding & secondary containment	No information available.
Signage	No information available.
Location test certificate	No information available.
Flammable zone	No information available.
Fire extinguisher	No information available.

Note: No information available.

Other Legislation In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health, Safety in Employment Act and Regulations, local Council Rules and Regional Council Plans.

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SECTION 16: Other information

16.1 Abbreviations and acronyms:

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ATE = acute toxicity estimate
CAS = Chemical Abstracts Service
CLP = Classification, Labelling and Packaging
DMEL = Derived Minimum Effect Level
DNEL = Derived No Effect Level
EC50 = Median effective concentration
ECB = European Chemicals Bureau
EEC = European Economic Community
EINECS = European Inventory of Existing Commercial Chemical Substances
EL50 = Median effective loading
ELINCS = European List of Notified Chemical Substances
EmS = Emergency Schedules
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IC50 = Inhibition concentration, 50%
IMDG = International Maritime Code for Dangerous Goods
IUCLID = International Uniform Chemical Information Database
LC50 = Lethal concentration, 50%
LD50 = Median lethal dose
LC0 = lethal concentration, 0%
LOAEL = lowest-observed-adverse-effect level
LL50 = Median lethal loading
LQ = Limited Quantities
MARPOL = International Convention for the Prevention of Marine Pollution from Ships
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
PBT = Persistent, Bioaccumulative and Toxic substance
PNEC = Predicted No-Effect Concentration
REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
STP = Sewage Treatment Plant
TLV@/TWA = Threshold limit value – time-weighted average
TLV@STEL = Threshold limit value – short-time exposure limit
VOC = Volatile Organic Compounds
vPvB = very Persistent and very Bioaccumulative

16.2 Other information

Classification procedure

skin sensitisation Category 1: H317 May cause an allergic skin reaction. (On basis of test data)
acute inhalation toxicity Category 4: H332 Harmful if inhaled. (On basis of test data)
specific target organ toxicity - single exposure Category 3: H335 May cause respiratory irritation. (On basis of test data)

Modified position

none

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