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

1.1 Product identifier

Trade name/designation OP-Coat 590 Part B

Art-Nr. 301102958

Unique Formula Identifier UFI: G7EY-0X3Y-320E-8FX9

Hazard components
2-Ethyl-1-hexanol blocked 1,5-pentamethylene diisocyanate homopolymer, Aliphatic polyisocyanate, allophanate

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

Use of the substance/mixture
Curing agent

1.3 Details of the supplier of the safety data sheet

Supplier
H2N TRADING GmbH
Bgm.-Bombeck-Str. 1
D-22851 Norderstedt
Telephone +49 (0)40 308 598 51
Telefax +49 (0)40 308 598 53
E-mail info@h2n-trading.de
Website www.h2n-trading.de

Department responsible for information:
Telephone +49 (0)40 308 598 51

1.4 Emergency telephone number

Giftinformationszentrale Göttingen GIZ-Nord	+49(0)551/ 19 240
	24/7
H2N TRADING GmbH	+49 (0)40 308 598 51
	Only available during office hours: Monday to Friday from 9.00 am to 5.00 pm.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [CLP]	Classification procedure
Acute Tox. 4, H332	
Skin Sens. 1, H317	
STOT SE 3, H335	

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

Remark
The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

Additional information
Contains 45 % of components with unknown hazards to the aquatic environment.
Please note: Product not yet fully tested.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Hazard components
2-Ethyl-1-hexanol blocked 1,5-pentamethylene diisocyanate homopolymer, Aliphatic polyisocyanate, allophanate

Hazard pictograms

GHS07

Signal word
Warning

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

Precautionary statements
P102 Keep out of reach of children.
P260 Do not breathe mist/vapours/spray.
P280 Wear protective gloves/protective clothing and eye protection/face protection.
P302 + P352 IF ON SKIN: Wash with plenty of water and soap.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P315 Get immediate medical advice/attention.
P501 Dispose of contents/container to a licensed disposal company.

Special rules for supplemental label elements for certain mixtures
EUH204 Contains isocyanates. May produce an allergic reaction.

Special rules on packaging
Tactile warning according to EN/ISO 11683.

Additional information
< 0.1% 1,5-pentamethylene diisocyanate is present as an impurity/residue.
Flammable liquid. Reacts with water to release carbon dioxide (CO_2).

2.3 Other hazards

Results of PBT and vPvB assessment
This substance/mixture does not contain components classified as either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition / information on ingredients

3.1 Substances

not applicable

3.2 Mixtures

Hazardous ingredients

CAS No	EC No	Index No	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008 [CLP]	SCL/ M/ ATE
1976005-08-9			2-Ethyl-1-hexanol blocked 1,5-pentamethylene diisocyanate homopolymer	50 - 75 weight-%	Acute Tox. 4; H332 Eye Irrit. 2; H319 Skin Sens. 1; H317 STOT SE 3; H335	ATE(oral): > 2000 mg/kg ATE(dermal): > 2000 mg/kg ATE(inhalation dust/mist): 0.31 mg/L

CAS No	EC No	Index No	Substance name	Concentration	Classification according to Regulation (EC) No 1272/2008 [CLP]	SCL/ M/ ATE
			Aliphatic polyisocyanate, allophanate	25 - 50 weight-%	Acute Tox. 4; H332 Skin Sens. 1; H317 STOT SE 3; H335	ATE(oral): > 2000 mg/kg ATE(inhalation dust/mist): 1.13 mg/L
4538-42-5			1,5-pentamethylene diisocyanate	< 0.1 weight-%	Acute Tox. 3; H301 Acute Tox. 1; H330 Skin Corr. 1C; H314 Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335	

Additional information
Aliphatic polyisocyanate
The substances contained do not meet the definition of diisocyanates. The regulations on the use and marketing of diisocyanates in accordance with the REACH Regulation therefore do not apply.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Remove contaminated, saturated clothing immediately.

Following inhalation
Provide fresh air.
In the event of symptoms refer for medical treatment.
In case of irregular breathing or respiratory arrest initiate artificial respiration.

Following skin contact
After contact with skin, wash immediately with plenty of water and soap.
In case of skin reactions, consult a physician.

After eye contact
Rinse immediately carefully and thoroughly with eye-bath or water.
Remove contact lenses.
Consult an ophthalmologist.

Following ingestion
Do NOT induce vomiting.
Rinse mouth immediately and drink plenty of water.
Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

No data available

4.3 Indication of any immediate medical attention and special treatment needed

Notes for the doctor
First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Dry extinguishing powder
Carbon dioxide (CO_2)
alcohol resistant foam
Full water jet

Unsuitable extinguishing media
Full water jet

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products
In the case of thermal decomposition formation of dangerous gases possible.
Carbon monoxide
Carbon dioxide (CO_2)
Nitrogen oxides (NO_x)
Isocyanate vapors
Hydrogen cyanide (hydrocyanic acid)

5.3 Advice for firefighters

Special protective equipment for firefighters
In case of fire: Wear self-contained breathing apparatus.
Chemical protection suit

Additional information
Use water spray jet to protect personnel and to cool endangered containers.
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Ensure adequate ventilation / exhaustion at the workplace.
Remove all sources of ignition.
Keep people away and stay on the upwind side.
Avoid skin and eye contact.
Use personal protection equipment.
Do not breathe gas / fumes / vapor / spray.
Use breathing apparatus if exposed to vapors / spray.

6.2 Environmental precautions

Do not seep away runed out product into ground or body of water.
Do not allow to enter into surface water or drains.
If the product contaminates soil, waterways or drains inform the corresponding authorities.

6.3 Methods and material for containment and cleaning up

For containment
Ensure adequate ventilation.
Suitable material for taking up:
Sand
Sawdust
calcium silicate hydrate
Cover with moist, liquid-binding material (e.g. sand, chemical binders based on calcium silicate hydrate). After approx. 1 hour, collect mechanically in waste containers, do not seal (CO_2 development).
Send in suitable containers for recovery or disposal.
After taking up the material dispose according to regulation.

For cleaning up
The leak area can be decontaminated with the following recommended decontamination agent:
Decontamination agent 1: 8-10% sodium carbonate and 2% aqueous liquid soap
Decontamination agent 2: Liquid/yellow soap (potassium soap with ~15% anionic surfactants): 20 ml; water: 700 ml; polyethylene glycol (PEG 400): 350 ml
Decontamination agent 3: 30% commercial liquid detergent (containing monoethanolamine), 70% water

6.4 Reference to other sections

Safe handling: see section 7
Disposal: see section 13
Personal protection equipment: see section 8
Emergency telephone number: see section 1

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures
Keep container tightly closed.
Do not allow this material to come into contact with water (or humid air).
If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.
Do not inhale polishing dust.
Protect from heat and direct sunlight.
Keep in a cool, well-ventilated place.
Avoid:
Eye contact
Skin contact
Do not inhale gases/vapours/aerosols.

Advices on general occupational hygiene
Thorough skin-cleansing after handling the product.
Apply skin care products after work.
When using do not eat, drink, smoke, sniff.
Remove contaminated, saturated clothing immediately.
Work in rooms with good ventilation.
Wash hands before breaks and after work.
Use protective skin cream before handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Keep/Store only in original container.
Keep container tightly closed.

Further information on storage conditions
Store and transport separate of food.

7.3 Specific end use(s)

No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

No data available

8.2 Exposure controls

Appropriate engineering controls

Technical measures to prevent exposure
Ensure good ventilation, where necessary use fume hood.

Personal protection equipment

Eye/face protection
Eye glasses with side protection

Hand protection
The selection of the suitable gloves does not only depend on different material, but also on further marks of quality and varies from manufacturer to manufacturer.
Suitable material:
NBR (Nitrile rubber)
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.
The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Body protection:
Protective clothing

Respiratory protection
Respiratory protection is required at workplaces with inadequate ventilation and during spray application.
Short term: filter apparatus, Filter A/P2
Breathing apparatus if sanding dust occurs.
Wear fine dust mask / particle filter P2 if dust is generated.

Additional information
-

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state
liquid

Colour
colourless
yellowish

Odour
almost odourless

Safety relevant basis data

	Value	Method	Source, Remark
Odour threshold:	not determined		
Melting point/freezing point	Melting point approx. -37 °C		
Boiling point or initial boiling point and boiling range	not determined		
flammability	not determined		
Lower and upper explosion limit	not determined		
Flash point	approx. 254 °C	EN ISO 3679	
Auto-ignition temperature	approx. 430 °C	DIN 51794	

	Value	Method	Source, Remark
Decomposition temperature	not determined		
pH	not determined		
Viscosity	dynamic approx. 2120 mPa*s (20°C)	DIN ISO 3219	
Solubility(ies)	Water solubility		Reacts with water
Partition coefficient n-octanol/water (log value)	not determined		
Vapour pressure	approx. 0.00012 hPa (20°C)		
Vapour pressure	approx. 0.00187 hPa (55°C)		
Density and/or relative density	approx. 1.14 g/cm³ (20°C) pressure 1013 hPa		
Relative vapour density	not determined		
particle characteristics	not determined		

9.2 Other information

Other information
see technical data sheet

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

The product is chemically stable under recommended conditions of storage, use and temperature.

10.3 Possibility of hazardous reactions

Reacts with water to form carbon dioxide. Risk of container bursting. Reacts with water at the interface to form a solid, high-melting and insoluble reaction product (polyurea) with the formation of carbon dioxide.

This reaction is greatly promoted by surface-active substances (e.g. liquid soaps) or water-soluble solvents.
Based on experience to date, polyurea is inert and non-degradable.
The substance may react dangerously with the substances listed above, among others.
exothermic reaction with:

10.4 Conditions to avoid

Protect from frost, heat and direct sunlight.

10.5 Incompatible materials

Alcohols
Amines

10.6 Hazardous decomposition products

Concerning possible decomposition products see section 5.
Carbon monoxide
Isocyanate
Hydrogen cyanide (hydrocyanic acid)
Carbon dioxide
Nitrogen oxides (NOx)
Nitrogen oxides can react with water vapor to form nitric acid.

SECTION 11: Toxicological information

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

Acute toxicity

Animal data

	Effective dose	Method,Evaluation	Source, Remark
Acute oral toxicity	CAS No1976005-08-9 2-Ethyl-1-hexanol blocked 1,5-pentamethylene diisocyanate homopolymer LD50: > 2000 mg/kg Species Rat, female	OECD 423	
	Aliphatic polyisocyanate, allophanate LD50: > 2000 mg/kg Species Rat, female	OECD 420	
Acute dermal toxicity	CAS No1976005-08-9 2-Ethyl-1-hexanol blocked 1,5-pentamethylene diisocyanate homopolymer LD50: > 2000 mg/kg Species Rat	OECD 402	
Acute inhalation toxicity	Acute inhalation toxicity (dust/mist) ATEmix calculated: 1.31 mg/L Exposure time 4 h		
	CAS No1976005-08-9 2-Ethyl-1-hexanol blocked 1,5-pentamethylene diisocyanate homopolymer Acute inhalation toxicity (dust/mist) LC50: 0.31 mg/L Species Rat Exposure time 4 h	OECD 403	
	Acute inhalation toxicity (dust/mist) conversion value 1.5 mg/L	Expert assessment	
	Aliphatic polyisocyanate, allophanate Acute inhalation toxicity (dust/mist) LC50: 1.13 mg/L Species Rat Exposure time 4 h	OECD 403	

	Effective dose	Method,Evaluation	Source, Remark
	Acute inhalation toxicity (dust/mist) conversion value 1.5 mg/L	Expert assessment	

Other information
The test atmosphere created in the animal study is not representative of the situation in the workplace, the way in which the substance is marketed or is likely to be used. Therefore, the test result cannot be used directly for hazard assessment. Based on expert judgement and weight-of-evidence, a modified classification of acute inhalation toxicity is justified.

Assessment/classification
Harmful if inhaled.

Skin corrosion/irritation

Assessment/classification
Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Assessment/classification
Causes serious eye irritation.

Sensitisation to the respiratory tract

Assessment/classification
Based on available data, the classification criteria are not met.

Skin sensitisation

Assessment/classification
May cause an allergic skin reaction.

Germ cell mutagenicity

Assessment/classification
Based on available data, the classification criteria are not met.

Carcinogenicity

Assessment/classification
Based on available data, the classification criteria are not met.

Reproductive toxicity

Assessment/classification
Based on available data, the classification criteria are not met.

STOT-single exposure

STOT SE 1 and 2

Other information
No effects known.

STOT SE 3

Irritation to respiratory tract

Assessment/classification
May cause respiratory irritation.

Narcotic effects

Assessment/classification
Not classified

STOT-repeated exposure

Other information
Based on available data, the classification criteria are not met.

Aspiration hazard

Remark
No classification in terms of aspiration.

11.2 Information on other hazards

Information on other hazards

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties		Based on available data, the classification criteria are not met.	

Other information

Special properties/effects: In case of overexposure – especially when spraying isocyanate-containing paints without protective measures – there is a risk of concentration-dependent irritation of the eyes, nose, throat and airways. Delayed onset of symptoms and development of hypersensitivity (breathing difficulties, coughing, asthma) are possible. In hypersensitive individuals, reactions can be triggered even at very low isocyanate concentrations, even below the occupational exposure limit. Prolonged skin contact may cause tanning and irritation.
The product should be handled with the care usual when dealing with chemicals.
Further hazardous properties can not be excluded.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity

	Effective dose	Method,Evaluation	Source, Remark
Acute (short-term) fish toxicity	CAS No1976005-08-9 2-Ethyl-1-hexanol blocked 1,5-pentamethylene diisocyanate homopolymer LC50: > 100 mg/L Species Danio rerio Test duration 96 h	OECD 203	
Chronic (long-term) fish toxicity	not determined		
Acute (short-term) toxicity to crustacea	CAS No1976005-08-9 2-Ethyl-1-hexanol blocked 1,5-pentamethylene diisocyanate homopolymer EC50 > 100 mg/L Species Daphnia magna (Big water flea) Test duration 48 h	OECD 202	

	Effective dose	Method,Evaluation	Source, Remark
	Aliphatic polyisocyanate, allophanate EL50 > 100 mg/L Species Daphnia magna (Big water flea) Test duration 48 h	OECD 202	
Chronic (long-term) toxicity to aquatic invertebrate	not determined		
Acute (short-term) toxicity to algae and cyanobacteria	CAS No1976005-08-9 2-Ethyl-1-hexanol blocked 1,5-pentamethylene diisocyanate homopolymer ErC50: > 100 mg/L Species Desmodesmus subspicatus Test duration 72 h	OECD 201	
Chronic (long-term) toxicity to aquatic algae and cyanobacteria	not determined		
Toxicity to other aquatic plants/organisms	not determined		
Toxicity to microorganisms	CAS No1976005-08-9 2-Ethyl-1-hexanol blocked 1,5-pentamethylene diisocyanate homopolymer EC50 3828 mg/L Species activated sludge Test duration 3 h	OECD 209	
	Aliphatic polyisocyanate, allophanate EC50 > 100 mg/L Species activated sludge	OECD 209	

12.2 Persistence and degradability

	Value	Method	Source, Remark
Biodegradation			Not easily biodegradable.
Abiotic degradation			The product hydrolyses quickly in the presence of water.

12.3 Bioaccumulative potential

Assessment/classification
Accumulation in organisms is not expected.
The substance hydrolyses rapidly in water.

12.4 Mobility in soil

Assessment/classification
Formation of an insoluble polyurea.

12.5 Results of PBT and vPvB assessment

This substance/mixture does not contain components classified as either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

	Effective dose	Method,Evaluation	Source, Remark
Endocrine disrupting properties		Based on available data, the classification criteria are not met.	

12.7 Other adverse effects

Additional ecotoxicological information

Additional information

Ecological data for the mixture are not available.
Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste codes/waste designations according to EWC/AVV

Waste code product	Waste name
080501 *	waste isocyanates

Waste code packaging	Waste name
150102	plastic packaging
150104	metallic packaging

Appropriate disposal / Product

-
The waste code number mentioned is only intended as a recommendation.
The used product may have different properties than the unused one. This safety data sheet cannot provide any information on the used product.
Dispose of waste according to applicable legislation.
Dispose of waste according to "Kreislaufwirtschaftsgesetz (KrWG)".
This means that a distinction must be made between "wastes for recycling" and "wastes for disposal". Particular aspects - in the main concerning delivery - are also governed by the German federal states.

Appropriate disposal / Package

-
Disposal in accordance with local regulations.

Remark

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1 UN number or ID number	-	-	-
14.2 UN proper shipping name	-	-	-
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	-	-	-

14.6 Special precautions for user

No data available

14.7 Maritime transport in bulk according to IMO instruments

No data available

All transport carriers

No dangerous good in sense of these transport regulations.

SECTION 15: Regulatory information

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

Other regulations (EU)

To follow:

-

15.2 Chemical Safety Assessment

No data available

SECTION 16: Other information

Indication of changes

* Data changed compared with the previous version

Abbreviations and acronyms

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).
CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging
ECHA: European Chemicals Agency
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
REACH: Registration, Evaluation and Authorization of Chemicals
PNEC: Predicted No Effect Concentration
SCL: Specific concentration limit
STOT: Specific Target Organ Toxicity
DNEL: derived no-effect level
EC50: Effective Concentration 50%
IC50: Inhibition Concentration 50 %
LC50: Lethal (fatal) Concentration 50%
LD50: Lethal (fatal) Dose 50%
SVHC: Substance of Very High Concern
PBT: persistent and bioaccumulative and toxic
vPvB: very persistent, very bioaccumulative
WGK: water hazard class
See overview table at www.euphrac.eu
Acute Tox. 3, H301: Acute Toxicity (oral), Category 3
Skin Corr. 1C: Skin corrosion, Sub-category 1C
Eye Dam. 1: Serious eye damage, Category 1
Eye Irrit. 2: Eye irritation, Category 2
Resp. Sens. 1: Respiratory sensitizer, Category 1
Skin Sens. 1: Skin sensitizer, Category 1
STOT SE 3, H335: Specific target organ toxicity (single exposure), Category 3
Acute Tox. 1, H330: Acute Toxicity (inhalation), Category 1
Acute Tox. 4, H332: Acute Toxicity (inhalation), Category 4

Key literature references and sources for data
Data sheets of the sub-supplier.
European Chemicals Agency (ECHA)
Full text of Hazard Statements in Section 3 (NOT classification of the mixture).
IFA, GESTIS International Limit Values Database

Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]
The classification of the mixture was carried out following the calculation method according to the CLP Regulation (1272/2008).

Training advice
See technical data sheet for more information.
-
The product is mainly used as a hardener in coating materials or adhesives. Handling of coating materials or adhesives containing reactive polyisocyanates and residual monomeric HDI requires appropriate protective measures (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.

Additional information
National and local regulations concerning chemicals shall be observed.
The national special regulations must be implemented by each user on his own responsibility!
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
Please observe the following disclaimer! Our safety data sheets have been compiled according to effective EU directives, WITHOUT taking into account the special national directives concerning the handling of hazardous substances.

Relevant H- and EUH-phrases (Number and full text)

H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.