

ORALITE® Hardener H5010

Print date: 07.09.2016

Product code: 359000000

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

1.1. Product identifier

ORALITE® Hardener H5010

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

Use of the substance/mixture

Process regulator or aid

1.3. Details of the supplier of the safety data sheet

Company name:	ORAFOL Europe GmbH	
	Germany	
Street:	Orafolstraße 2	
Place:	D-16515 Oranienburg	
Telephone:	+ 49 3301 864 0	Telefax: + 49 3301 864 100
e-mail:	msds@orafol.de	
Internet:	www.orafol.com	

1.4. Emergency telephone number:

National Poison Information Service: In case of a medical emergency following exposure to a chemical, the public should call NHS Direct in England or Wales 0845 46 47 or NHS 24 in Scotland 08454 24 24 24 (UK only).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:

Flammable liquid: Flam. Liq. 3

Acute toxicity: Acute Tox. 4

Skin corrosion/irritation: Skin Irrit. 2

Serious eye damage/eye irritation: Eye Irrit. 2

Respiratory or skin sensitisation: Skin Sens. 1

Specific target organ toxicity - single exposure: STOT SE 3

Specific target organ toxicity - repeated exposure: STOT RE 2

Hazard Statements:

Flammable liquid and vapour.

Causes skin irritation.

May cause an allergic skin reaction.

Causes serious eye irritation.

Harmful if inhaled.

May cause respiratory irritation.

May cause damage to organs through prolonged or repeated exposure.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling

Hexamethylene 1,6-diisocyanate, oligomers

xylene

ethylbenzene

hexamethylene-di-isocyanate

Signal word: Warning

Pictograms:



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Hazard statements

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P312	Call a POISON CENTER/doctor if you feel unwell.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Special labelling of certain mixtures

EUH204	Contains isocyanates. May produce an allergic reaction.
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2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification according to Regulation (EC) No. 1272/2008 [CLP]			
28182-81-2	Hexamethylene 1,6-diisocyanate, oligomers			>= 55 < 85 %
	500-060-2		01-2119970543-34	
	Acute Tox. 4, Skin Sens. 1, STOT SE 3; H332 H317 H335			
1330-20-7	xylene			>= 10 < 13 %
	215-535-7	601-022-00-9		
	Flam. Liq. 3, Acute Tox. 4, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, STOT RE 2, Asp. Tox. 1; H226 H312 H332 H315 H319 H335 H373 H304			
108-65-6	2-methoxy-1-methylethyl acetate			>= 10 < 25 %
	203-603-9	607-195-00-7		
	Flam. Liq. 3; H226			
100-41-4	ethylbenzene			>= 1 < 2,1 %
	202-849-4	601-023-00-4	01-2119489370-35	
	Flam. Liq. 2, Acute Tox. 4, STOT RE 2, Asp. Tox. 1; H225 H332 H373 H304			
822-06-0	hexamethylene-di-isocyanate			0,1 < 0,34 %
	212-485-8	615-011-00-1	01-2119457571-37	
	Acute Tox. 3, Skin Irrit. 2, Eye Irrit. 2, Resp. Sens. 1, Skin Sens. 1, STOT SE 3; H331 H315 H319 H334 H317 H335			

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

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4.1. Description of first aid measures**General information**

When in doubt or if symptoms are observed, get medical advice. If unconscious place in recovery position and seek medical advice.

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration.

After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting.

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

No information available.

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

Treat symptomatically.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Water spray jet, Carbon dioxide (CO₂), alcohol resistant foam, Extinguishing powder.

Unsuitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

Flammable. Vapours can form explosive mixtures with air. In case of fire may be liberated: Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Hydrogen cyanide (hydrocyanic acid), Carbon monoxide.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. 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**

Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Danger of explosion

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion

Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharges. Vapours can form explosive mixtures with air.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Advice on storage compatibility

Do not store together with: Oxidising agent., Amines, Alcohols, Strong acid, Strong alkali.

Further information on storage conditions

Recommended storage temperature: 15 - 30 °C

7.3. Specific end use(s)

Process regulator or aid

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
108-65-6	1-Methoxypropyl acetate	50	274		TWA (8 h)	WEL
		100	548		STEL (15 min)	WEL
100-41-4	Ethylbenzene	100	441		TWA (8 h)	WEL
		125	552		STEL (15 min)	WEL
1330-20-7	Xylene: mixed isomers	50	220		TWA (8 h)	WEL
		100	441		STEL (15 min)	WEL

Biological Monitoring Guidance Values (EH40)

CAS No	Substance	Parameter	Value	Test material	Sampling time
1330-20-7	Xylene, o-, m-, p- or mixed isomers	methyl hippuric acid	650 mmol/mol	urine	Post shift

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
28182-81-2	Hexamethylene 1,6-diisocyanate, oligomers			
Worker DNEL, long-term		inhalation	local	0,5 mg/m ³
Worker DNEL, acute		inhalation	local	1 mg/m ³

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PNEC values

CAS No	Substance	
	Environmental compartment	Value
28182-81-2	Hexamethylene 1,6-diisocyanate, oligomers	
	Micro-organisms in sewage treatment plants (STP)	6,46 mg/l

8.2. Exposure controls



Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Eye/face protection

Wear eye/face protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. 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. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
Colour: colourless

Test method

pH-Value: not determined

Changes in the physical state

Melting point: not determined

Initial boiling point and boiling range: 137 °C

Flash point: 39 °C

Flammability

Solid: not applicable

Gas: not applicable

Lower explosion limits: 1,1 vol. %

Upper explosion limits: 10,8 vol. %

Ignition temperature: 425 °C

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Auto-ignition temperature

Solid:

not applicable

Gas:

not applicable

Decomposition temperature:

not determined

Oxidizing properties

Not oxidizing.

Vapour pressure:

10 hPa

(at 20 °C)

Density (at 20 °C):

1,06 g/cm³ ISO 2811

Water solubility:

not determined

Solubility in other solvents

not determined

Partition coefficient:

not determined

Viscosity / dynamic:

150 mPa·s

(at 20 °C)

Viscosity / kinematic:

90 mm²/s

(at 40 °C)

Flow time:

< 12 4 DIN 53211

(at 20 °C)

Vapour density:

not determined

Evaporation rate:

not determined

9.2. Other information

Solid content:

not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

After contact with water: slow decomposition. Formation of: Carbon dioxide (CO₂). Flammable.

10.2. Chemical stability

Danger of polymerisation.

10.3. Possibility of hazardous reactions

Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

10.4. Conditions to avoid

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Vapours can form explosive mixtures with air.

10.5. Incompatible materials

Exothermic reaction with: Oxidising agent, Amines, Alcohols, Strong acid, Strong alkali.

10.6. Hazardous decomposition products

Hydrogen cyanide (hydrocyanic acid), Nitrogen oxides (NO_x), Amines, monomer Isocyanate, Alcohols, Carbon dioxide (CO₂), Carbon monoxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

ATEmix calculated

ATE (inhalative vapour) 11,06 mg/l; ATE (inhalative aerosol) 1,500 mg/l

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Acute toxicity

CAS No	Chemical name			
	Exposure route	Dose	Species	Source
28182-81-2	Hexamethylene 1,6-diisocyanate, oligomers			
	inhalative vapour	ATE 11 mg/l		
	inhalative aerosol	ATE 1,5 mg/l		
1330-20-7	xylene			
	oral	LD50 4300 mg/kg	Rat	EU Method B.1
	dermal	LD50 12126 mg/kg	Rabbit	Single dermal dose u
	inhalative vapour	ATE 11 mg/l		
	inhalative aerosol	ATE 1,5 mg/l		
108-65-6	2-methoxy-1-methylethyl acetate			
	oral	LD50 8532 mg/kg	Rat	RTECS
	dermal	LD50 7500 mg/kg	Rabbit	
100-41-4	ethylbenzene			
	oral	LD50 ca. 3500 mg/kg	Rat	No guideline availab
	dermal	LD50 15400 mg/kg	Rabbit	GESTIS
	inhalative (4 h) vapour	LC50 17,2 mg/l	Rat	
	inhalative aerosol	ATE 1,5 mg/l		
822-06-0	hexamethylene-di-isocyanate			
	inhalative vapour	ATE 3 mg/l		
	inhalative aerosol	ATE 0,5 mg/l		

Additional information on tests

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

SECTION 12: Ecological information

12.1. Toxicity

The product is not: Ecotoxic.

CAS No	Chemical name				
	Aquatic toxicity	Dose	[h] [d]	Species	Source
108-65-6	2-methoxy-1-methylethyl acetate				
	Acute fish toxicity	LC50 161 mg/l	96 h	Pimephales promelas	
	Acute crustacea toxicity	EC50 408 mg/l	48 h	Daphnia magna	
100-41-4	ethylbenzene				
	Acute algae toxicity	ErC50 3,6 mg/l	96 h		GESTIS

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

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Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
108-65-6	2-methoxy-1-methylethyl acetate	0,43
100-41-4	ethylbenzene	3,15

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The product has not been tested.

12.6. Other adverse effects

No information available.

Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

080312 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of printing inks; waste ink containing hazardous substances
Classified as hazardous waste.

Waste disposal number of used product

080312 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of printing inks; waste ink containing hazardous substances
Classified as hazardous waste.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 1263
14.2. UN proper shipping name: Paint related material
14.3. Transport hazard class(es): 3
14.4. Packing group: III
 Hazard label: 3



Classification code: F1
 Special Provisions: 163 367 640E 650
 Limited quantity: 5 L
 Excepted quantity: E1
 Transport category: 3
 Hazard No: 30

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Tunnel restriction code:

D/E

Inland waterways transport (ADN)

14.1. UN number:

UN 1263

14.2. UN proper shipping name:

Paint related material

14.3. Transport hazard class(es):

3

14.4. Packing group:

III

Hazard label:

3



Classification code:

F1

Special Provisions:

163 367 640E 650

Limited quantity:

5 L

Excepted quantity:

E1

Marine transport (IMDG)

14.1. UN number:

UN 1263

14.2. UN proper shipping name:

Paint related material

14.3. Transport hazard class(es):

3

14.4. Packing group:

III

Hazard label:

3



Special Provisions:

163, 223, 367, 955

Limited quantity:

5 L

Excepted quantity:

E1

EmS:

F-E, S-E

Air transport (ICAO)

14.1. UN number:

UN 1263

14.2. UN proper shipping name:

Paint related material

14.3. Transport hazard class(es):

3

14.4. Packing group:

III

Hazard label:

3



Special Provisions:

A3 A72 A192

Limited quantity Passenger:

10 L

Passenger LQ:

Y344

Excepted quantity:

E1

IATA-packing instructions - Passenger:

355

IATA-max. quantity - Passenger:

60 L

IATA-packing instructions - Cargo:

366

IATA-max. quantity - Cargo:

220 L

14.6. Special precautions for user

Warning: Combustible liquid.

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

not applicable

SECTION 15: Regulatory information

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

EU regulatory information

2004/42/EC (VOC): 25,5 % (270,3 g/l)

National regulatory information

Employment restrictions: Observe restrictions to employment for juvenils according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water contaminating class (D): 2 - water contaminating

Skin resorption/Sensitization: Causes allergic hypersensitivity reactions.

Additional information

This mixture contains the following substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH: none

This mixture contains the following substances of very high concern (SVHC) which are subject to authorisation according to Annex XIV of REACH: none

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Relevant H and EUH statements (number and full text)

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
EUH204	Contains isocyanates. May produce an allergic reaction.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our



Safety Data Sheet

ORAFOL Europe GmbH
Germany

according to Regulation (EC) No 1907/2006

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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.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)