

SAFETY DATA SHEET

Version #: 07

Issue date: 05-29-2019

Revision date: 07-31-2023

Supersedes date: 07-14-2023

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

1.1. Product identifier

Trade name or designation of the mixture DEVCON® DFense Blok™ Surface Wetting Agent Hardener

Registration number -

Synonyms None.

SKU# 5603

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

Identified uses Not available.

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

Company Name ITW Performance Polymers

Address Bay 150
Shannon Industrial Estate
Co. Clare
Ireland
V14 DF82

Contact Person Customer Service

Telephone Number 353(61)771500
353(61)471285

Email customerservice.shannon@itwpp.com

Emergency Phone Number 44(0) 1235 239 670 (24 hours)

1.4. Emergency telephone number

General in EU 112 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Austria National Poisons Information Center +431 406 4343 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Belgium National Poisons Control Center 070 245 245 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Bulgaria National Toxicological Information Center +359 2 9154 233 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Croatia Poisons Information Center +385 1 2348 342 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)

Cyprus Poison Center 1401 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Czech Republic National Poisons Information Center +420 224 919 293, or +420 224 915 402 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)

Denmark National Poisons Control Center +45 82 12 12 12 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

Estonia National Poisons Information Center 16662 or abroad: (+372) 626 9390 (Monday 9:00AM to Saturday 9:00AM (closed on Sundays and on national holidays). SDS/Product information may not be available for the Emergency Service.)

Finland National Poison Information Center (09) 471 977 (direct) or (09) 4711 (exchange) (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

France National Poisons Control Center ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

1.4. Emergency telephone number

Greece Poison Information Centre	(0030) 2107793777 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Hungary National Emergency Phone Number	+36-80-201-199 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Iceland Poison Center	(+354) 543 2222 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Latvia Emergency medical aid	113
Latvia Poison and Drug Information Center	+371 67042473 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Lithuania Neatidėliotina informacija apsinuodijus	+370 5 236 20 52 or +37068753378 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)
Malta Accident and Emergency Department	2545 4030 (Hours of operation not provided. SDS/Product information may not be available for the Emergency Service.)
Netherlands National Poisons Information Center (NVIC)	NVIC: +31 (0)88 755 8000 (Only for the purpose of informing medical personnel in cases of acute intoxications)
Norway Norwegian Poison Information Center	22 59 13 00 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Portugal Poison Center	800 250 250 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Romania Biroul RSI si Informare Toxicologica	021.318.36.06 (Available 8:00AM-3:00PM. SDS/Product information may not be available for the Emergency Service.)
Slovakia National Toxicological Information Center	+421 2 5477 4166 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Spain Toxicology Information Service	+ 34 91 562 04 20 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Sweden National Poison Information Center	112 - and ask for Poison Information (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)
Switzerland Tox Info Suisse	145 (Available 24 hours a day. SDS/Product information may not be available for the Emergency Service.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Skin corrosion/irritation	Category 1B	H314 - Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Category 1	H318 - Causes serious eye damage.
Skin sensitization	Category 1	H317 - May cause an allergic skin reaction.
Reproductive toxicity	Category 2	H361 - Suspected of damaging fertility or the unborn child.

Environmental hazards

Hazardous to the aquatic environment, long-term aquatic hazard	Category 3	H412 - Harmful to aquatic life with long lasting effects.
--	------------	---

2.2. Label elements

UFI:

Austria: 7M30-30T6-E00J-M3KD
 Belgium: 7M30-30T6-E00J-M3KD
 Bulgaria: 7M30-30T6-E00J-M3KD
 Croatia: 7M30-30T6-E00J-M3KD
 Cyprus: 7M30-30T6-E00J-M3KD
 Czech Republic: 7M30-30T6-E00J-M3KD
 Denmark: 7M30-30T6-E00J-M3KD
 Estonia: 7M30-30T6-E00J-M3KD
 EU: 7M30-30T6-E00J-M3KD
 Finland: 7M30-30T6-E00J-M3KD
 France: 7M30-30T6-E00J-M3KD
 Germany: 7M30-30T6-E00J-M3KD
 Greece: 7M30-30T6-E00J-M3KD
 Hungary: 7M30-30T6-E00J-M3KD
 Iceland: 7M30-30T6-E00J-M3KD
 Ireland: 7M30-30T6-E00J-M3KD
 Italy: 7M30-30T6-E00J-M3KD
 Latvia: 7M30-30T6-E00J-M3KD
 Lithuania: 7M30-30T6-E00J-M3KD
 Luxembourg: 7M30-30T6-E00J-M3KD
 Malta: 7M30-30T6-E00J-M3KD
 Netherlands: 7M30-30T6-E00J-M3KD
 Norway: 7M30-30T6-E00J-M3KD
 Poland: 7M30-30T6-E00J-M3KD
 Portugal: 7M30-30T6-E00J-M3KD
 Romania: 7M30-30T6-E00J-M3KD
 Slovakia: 7M30-30T6-E00J-M3KD
 Slovenia: 7M30-30T6-E00J-M3KD
 Spain: 7M30-30T6-E00J-M3KD
 Sweden: 7M30-30T6-E00J-M3KD

Contains:

1,3-Benzenedimethanamine, 2,2,4(OR 2,4,4)-TRIMETHYLHEXANE-1,6-DIAMINE, 2,2'-iminodiethylamine; diethylenetriamine, 2-piperazin-1-ylethylamine, 4-tert-butylphenol, piperazine [liquid], Triethylolamine

Hazard pictograms



Signal word

Danger

Hazard statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H361	Suspected of damaging fertility or the unborn child.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe mist/vapors.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response

P330	Rinse mouth.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Storage

P405

Store locked up.

Disposal

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental label information

None.

2.3. Other hazards

This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII. The mixture does not contain any substances included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties at a concentration equal to or greater than 0.1% by weight.

SECTION 3: Composition/information on ingredients**3.2. Mixtures****General information**

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
1,3-Benzenedimethanamine	10 - 30	1477-55-0 216-032-5	01-2119480150-50-0000	-	
Classification: -					
4-tert-butylphenol	10 - 30	98-54-4 202-679-0	-	604-090-00-8	ED
Classification: Skin Irrit. 2;H315, Eye Dam. 1;H318, Repr. 2;H361f, Aquatic Chronic 1;H410(M=1), Aquatic Chronic 2;H411(M=1)					
2,2'-iminodiethylamine; diethylenetriamine	5 - 10	111-40-0 203-865-4	01-2119473793-27-0000	612-058-00-X	
Classification: Acute Tox. 4;H302;(ATE: 500 mg/kg bw), Acute Tox. 4;H312;(ATE: 1100 mg/kg bw), Skin Corr. 1B;H314, Eye Dam. 1;H318, Skin Sens. 1;H317					
2,2,4(OR 2,4,4)-TRIMETHYLHEXANE-1,6-DIA MINE	1 - 5	25513-64-8 247-063-2	-	-	
Classification: Skin Corr. 1C;H314, Eye Dam. 1;H318					
2-piperazin-1-ylethylamine	1 - <3	140-31-8 205-411-0	01-2119471486-30-0003	612-105-00-4	
Classification: Acute Tox. 4;H302;(ATE: 500 mg/kg bw), Acute Tox. 4;H312;(ATE: 1100 mg/kg bw), Skin Corr. 1B;H314, Eye Dam. 1;H318, Skin Sens. 1;H317, Aquatic Chronic 3;H412					
Triethylolamine	1 - <3	102-71-6 203-049-8	-	-	
Classification: Eye Irrit. 2;H319					
piperazine [liquid]	< 1	110-85-0 203-808-3	-	612-057-01-1	#
Classification: Skin Corr. 1B;H314, Eye Dam. 1;H318, Resp. Sens. 1;H334, Skin Sens. 1;H317, Repr. 2;H361fd					
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm]	< 0,2	13463-67-7 236-675-5	01-2119489379-17-0000	022-006-002	
Classification: Carc. 2;H351					
Other components below reportable levels	30 - 60				

List of abbreviations and symbols that may be used above

ATE: Acute toxicity estimate.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Union workplace exposure limit(s).

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition comments

The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures**General information**

IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

4.1. Description of first aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

4.2. Most important symptoms and effects, both acute and delayed Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

SECTION 5: Firefighting measures

General fire hazards	No unusual fire or explosion hazards noted.
5.1. Extinguishing media	
Suitable extinguishing media	Alcohol resistant foam. Powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
5.2. Special hazards arising from the substance or mixture	During fire, gases hazardous to health may be formed.
5.3. Advice for firefighters	
Special protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
For emergency responders	Keep unnecessary personnel away. Ensure adequate ventilation. Avoid breathing mist/vapors. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.
6.2. Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
6.3. Methods and material for containment and cleaning up	Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use.
6.4. Reference to other sections	For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
---	--

7.2. Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s)

Observe industrial sector guidance on best practices.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits****Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001, as amended**

Components	Type	Value	Form
1,3-Benzenedimethanamine (CAS 1477-55-0)	Ceiling	0,1 mg/m ³	
	MAK	0,1 mg/m ³	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	MAK	4 mg/m ³	
		1 ppm	
4-tert-butylphenol (CAS 98-54-4)	MAK	0,5 mg/m ³	
		0,08 ppm	
	STEL	2,5 mg/m ³	
		0,4 ppm	
piperazine [liquid] (CAS 110-85-0)	MAK	0,1 mg/m ³	
	STEL	0,3 mg/m ³	
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	MAK	5 mg/m ³	Respirable dust.
	STEL	10 mg/m ³	Respirable dust.
Triethylamine (CAS 102-71-6)	MAK	5 mg/m ³	Inhalable fraction.
		0,8 ppm	Inhalable fraction.
	STEL	10 mg/m ³	Inhalable fraction.
		1,6 ppm	Inhalable fraction.

Belgium. OEL. Exposure Limit Values to Chemical Substances at Work, Code of Well-being at work, Book VI, Title 1 - Chemical agents, as amended

Components	Type	Value	Form
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	4,3 mg/m ³	
		1 ppm	
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m ³	Vapor and aerosol.
	TWA	0,1 mg/m ³	Vapor and aerosol.
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	10 mg/m ³	
Triethylamine (CAS 102-71-6)	TWA	5 mg/m ³	

Belgium. OELs. Exposure Limit Values to Chemical Substances at Work, Code of Well-being at work, Book VI, Title 1, as amended

Components	Type	Value
1,3-Benzenedimethanamine (CAS 1477-55-0)	Ceiling	0,1 mg/m ³

Bulgaria. OELs. Ordinance No 13 on protection of workers against risks of exposure to chemical agents at work, as amended

Components	Type	Value	Form
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	4 mg/m3	
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3	
	TWA	0,1 mg/m3	
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	10 mg/m3	Respirable dust.

Croatia. OELs (GVI). Regulation on Protection of Workers against Exposure to Dangerous Chemicals at Work, OELs and Biological Limit Values, Annex I (NN 91/2018), as amended

Components	Type	Value	Form
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	MAC	4,3 mg/m3	
		1 ppm	
piperazine [liquid] (CAS 110-85-0)	MAC	0,1 mg/m3	
	STEL	0,3 mg/m3	
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	MAC	4 mg/m3	Respirable dust.
		10 mg/m3	Total dust.

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended

Components	Type	Value
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	4 mg/m3
		1 ppm
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	10 mg/m3

Cyprus. OELs. Occupational Exposure Limit Values of Chemicals at Work (Safety and Health at Work (Chem. Agents) Reg., Ann. 1, R.A.A. 268/2001, as amended)

Components	Type	Value	Form
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3	Vapor and dust.
	TWA	0,1 mg/m3	Vapor and dust.

Czech Republic. Occupational exposure limit values of chemicals at work (Decree on protection of health at work, 361/2007, Annex 2, Part A & Annex 3, Part A, as amended)

Components	Type	Value
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Ceiling	8 mg/m3
	TWA	4 mg/m3
piperazine [liquid] (CAS 110-85-0)	Ceiling	0,3 mg/m3
	TWA	0,1 mg/m3
Triethylolamine (CAS 102-71-6)	Ceiling	10 mg/m3
	TWA	5 mg/m3

Denmark. Work Environment Authority. Exposure Limits for Substances & Materials, Annex 2

Components	Type	Value
1,3-Benzenedimethanamine (CAS 1477-55-0)	Ceiling	0,1 mg/m3
		0,02 ppm
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TLV	4 mg/m3
		1 ppm
4-tert-butylphenol (CAS 98-54-4)	TLV	0,5 mg/m3
		0,08 ppm
piperazine [liquid] (CAS 110-85-0)	TLV	0,1 mg/m3
		0,003 ppm
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TLV	6 mg/m3
Triethylamine (CAS 102-71-6)	TLV	3,1 mg/m3
		0,5 ppm

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended

Components	Type	Value
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	STEL	10 mg/m3
		2 ppm
	TWA	4,5 mg/m3
		1 ppm
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3
	TWA	0,1 mg/m3
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	5 mg/m3
Triethylamine (CAS 102-71-6)	STEL	10 mg/m3
	TWA	5 mg/m3

Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health

Components	Type	Value	Form
1,3-Benzenedimethanamine (CAS 1477-55-0)	Ceiling	0,1 mg/m3	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	STEL	13 mg/m3	
		3 ppm	
	TWA	4,3 mg/m3	
		1 ppm	
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3	
		0,084 ppm	
	TWA	0,1 mg/m3	
		0,028 ppm	

Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health

Components	Type	Value	Form
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$] (CAS 13463-67-7)	TWA	10 mg/m ³	Dust.
Triethylamine (CAS 102-71-6)	TWA	5 mg/m ³	

France. OELs. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended

Components	Type	Value	Form
piperazine [liquid] (CAS 110-85-0)	VLE	0,3 mg/m ³	Vapor and dust.
	VME	0,1 mg/m ³	Vapor and dust.

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value	Form
1,3-Benzenedimethanamine (CAS 1477-55-0)	VLE	0,1 mg/m ³	
Regulatory status: Indicative limit (VL)			
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	VME	4 mg/m ³	
Regulatory status: Indicative limit (VL)			
		1 ppm	
Regulatory status: Indicative limit (VL)			
piperazine [liquid] (CAS 110-85-0)	VLE	0,3 mg/m ³	Vapor and dust.
Regulatory status: Regulatory indicative (VRI)			
	VME	0,1 mg/m ³	Vapor and dust.
Regulatory status: Regulatory indicative (VRI)			
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$] (CAS 13463-67-7)	VME	10 mg/m ³	
Regulatory status: Indicative limit (VL)			

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG), as updated

Components	Type	Value	Form
4-tert-butylphenol (CAS 98-54-4)	TWA	0,5 mg/m ³	Vapor and aerosol.
		0,08 ppm	Vapor and aerosol.
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$] (CAS 13463-67-7)	TWA	0,3 mg/m ³	Respirable fraction.
Triethylamine (CAS 102-71-6)	TWA	1 mg/m ³	Inhalable fraction.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
4-tert-butylphenol (CAS 98-54-4)	AGW	0,5 mg/m ³	Vapor and aerosol.
		0,08 ppm	Vapor and aerosol.
piperazine [liquid] (CAS 110-85-0)	AGW	0,1 mg/m ³	Vapor and aerosol.
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$] (CAS 13463-67-7)	AGW	10 mg/m ³	Inhalable fraction.

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value	Form
Triethylamine (CAS 102-71-6)	AGW	1,25 mg/m3 1 mg/m3	Respirable fraction. Inhalable fraction.

Greece. OELs, Presidential Decree No. 307/1986, as amended

Components	Type	Value	Form
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	4 mg/m3	
piperazine [liquid] (CAS 110-85-0)	STEL	1 ppm 0,3 mg/m3	Vapor and dust.
	TWA	0,1 mg/m3	Vapor and dust.
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Inhalable

Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended

Components	Type	Value
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	STEL	8 mg/m3
	TWA	4 mg/m3
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3
	TWA	0,1 mg/m3

Iceland. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, as amended

Components	Type	Value
1,3-Benzenedimethanamine (CAS 1477-55-0)	STEL	0,1 mg/m3
		0,02 ppm
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	4,5 mg/m3
		1 ppm
4-tert-butylphenol (CAS 98-54-4)	TWA	0,5 mg/m3
		0,08 ppm
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3
	TWA	0,1 mg/m3
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	6 mg/m3
Triethylamine (CAS 102-71-6)	TWA	5 mg/m3

Ireland. OELVs, Schedules 1 & 2, Code of Practice for Chemical Agents and Carcinogens Regulations

Components	Type	Value	Form
1,3-Benzenedimethanamine (CAS 1477-55-0)	TWA	0,1 mg/m3	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	4 mg/m3	
		1 ppm	

Ireland. OELVs, Schedules 1 & 2, Code of Practice for Chemical Agents and Carcinogens Regulations

Components	Type	Value	Form
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3	
	TWA	0,1 mg/m3	
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	4 mg/m3	Respirable dust.
		10 mg/m3	Total inhalable dust.
Triethylamine (CAS 102-71-6)	TWA	5 mg/m3	

Italy. OELs (Legislative Decree n.81, 9 April 2008), as amended

Components	Type	Value	Form
1,3-Benzenedimethanamine (CAS 1477-55-0)	Ceiling	0,018 ppm	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	1 ppm	
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3	Vapor and dust.
	TWA	0,1 mg/m3	Vapor and dust.
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	2,5 mg/m3	Respirable finescale particles
		0,2 mg/m3	Respirable nanoscale particles
Triethylamine (CAS 102-71-6)	TWA	5 mg/m3	

Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80, Annex 1), as amended

Components	Type	Value
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3
	TWA	0,1 mg/m3
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	10 mg/m3

Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Order No. V-824/A1-389), as amended

Components	Type	Value
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	STEL	10 mg/m3
		2 ppm
	TWA	4,5 mg/m3
		1 ppm
piperazine [liquid] (CAS 110-85-0)	TWA	0,1 mg/m3
		0,3 ppm
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	5 mg/m3
Triethylamine (CAS 102-71-6)	STEL	10 mg/m3

Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Order No. V-824/A1-389), as amended

Components	Type	Value
	TWA	5 mg/m3

Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ Memorial A, n ° 235/2016, as amended

Components	Type	Value	Form
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3	Vapor and dust.
	TWA	0,1 mg/m3	Vapor and dust.

Malta. OELs. Protection of Health and Safety of Workers from Risks related to Chemical Agents at Work (L.N 227/2003 Schedules I and V), as amended

Components	Type	Value
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3
	TWA	0,1 mg/m3

Netherlands. OELs per Annex XIII of Working Conditions Regulation (Staatscourant no. 252, 29 December 2006), as amended

Components	Type	Value
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3
	TWA	0,1 mg/m3

Norway. Regulation No. 1358 on Measures and Limit Values for Physical and Chemical Factors in Work Environment and Infection Groups for Biological Factors, as amended

Components	Type	Value
1,3-Benzenedimethanamine (CAS 1477-55-0)	Ceiling	0,1 mg/m3
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TLV	4 mg/m3
		1 ppm
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3
	TLV	0,1 mg/m3
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TLV	5 mg/m3
Triethylamine (CAS 102-71-6)	TLV	5 mg/m3

Poland. Maximum permissible concentrations and intensities of harmful factors in the work environment (Dz.U.Poz. 1286/2018, Annex 1)

Components	Type	Value	Form
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	STEL	12 mg/m3	
	TWA	4 mg/m3	
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3	
	TWA	0,1 mg/m3	
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	STEL	30 mg/m3	
	TWA	10 mg/m3	Inhalable fraction.

Portugal. Decree-Law No. 24/2012, Occupational Exposure Limit Values, Annex II, as amended

Components	Type	Value
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3
	TWA	0,1 mg/m3

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796-2014)

Components	Type	Value	Form
1,3-Benzenedimethanamine (CAS 1477-55-0)	Ceiling	0,1 mg/m3	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	1 ppm	
piperazine [liquid] (CAS 110-85-0)	TWA	0,03 ppm	Inhalable fraction and vapor.
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$] (CAS 13463-67-7)	TWA	10 mg/m3	
Triethylamine (CAS 102-71-6)	TWA	5 mg/m3	

Romania. OELs. Limit Values of Chemical Agents at Workplace (Regulation 1.218/2006, M.O 845, Annex 1, 3&4, as amended)

Components	Type	Value
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	STEL	4 mg/m3
		1 ppm
	TWA	2 mg/m3
		0,5 ppm
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3
	TWA	0,1 mg/m3
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$] (CAS 13463-67-7)	STEL	15 mg/m3
	TWA	10 mg/m3

Slovakia. OELs. Maximum permissible exposure limits for chemical factors in workplace air (Regulation No 355/2006, Annex 1, Table 1, as amended)

Components	Type	Value
4-tert-butylphenol (CAS 98-54-4)	TWA	0,5 mg/m3
		0,08 ppm
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3
	TWA	0,1 mg/m3
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$] (CAS 13463-67-7)	TWA	5 mg/m3

Slovenia. OELs. Occupational Exposure Limits of Chemicals at Workplace (Reg. on Protection of Workers from Risks due to Exp. to Chemicals at Work, Annex I), as amended

Components	Type	Value	Form
4-tert-butylphenol (CAS 98-54-4)	TWA	0,5 mg/m3	
		0,08 ppm	
piperazine [liquid] (CAS 110-85-0)	TWA	0,1 mg/m3	

Slovenia. OELs. Occupational Exposure Limits of Chemicals at Workplace (Reg. on Protection of Workers from Risks due to Exp. to Chemicals at Work, Annex I), as amended

Components	Type	Value	Form
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	10 mg/m3	Inhalable fraction.
		1,25 mg/m3	Respirable fraction.

Spain. OELs. INSST, Límites de Exposición Profesional Para Agentes Químicos, Table 1-Valores Límites Ambientales (VLAs)

Components	Type	Value	Form
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	4,3 mg/m3	
piperazine [liquid] (CAS 110-85-0)	STEL	1 ppm	Inhalable fraction and vapor.
		0,3 mg/m3	
		0,1 mg/m3	
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	10 mg/m3	
Triethylamine (CAS 102-71-6)	TWA	5 mg/m3	

Sweden. OELs (Annex 1). Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2018:1), as amended

Components	Type	Value	Form
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	STEL	10 mg/m3	
	TWA	2 ppm	
		4,5 mg/m3	
piperazine [liquid] (CAS 110-85-0)	Ceiling	1 ppm	
		0,3 mg/m3	
		0,08 ppm	
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	0,1 mg/m3	Total dust.
		0,03 ppm	
		5 mg/m3	
Triethylamine (CAS 102-71-6)	STEL	10 mg/m3	
	TWA	1,6 ppm	
		5 mg/m3	
		0,8 ppm	

Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle MAK-Werte

Components	Type	Value	Form
1,3-Benzenedimethanamine (CAS 1477-55-0)	TWA	0,1 mg/m3	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	4 mg/m3	
		1 ppm	
4-tert-butylphenol (CAS 98-54-4)	STEL	1 mg/m3	Vapor and aerosol.

Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle MAK-Werte

Components	Type	Value	Form
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	0,16 ppm	Vapor and aerosol.
		0,5 mg/m3	Vapor and aerosol.
	TWA	0,08 ppm	Vapor and aerosol.
		3 mg/m3	Respirable dust.
	STEL	5 mg/m3	Inhalable fraction.
	TWA	5 mg/m3	Inhalable fraction.

UK. OELs. Workplace Exposure Limits (WELs) (EH40/2005 (Fourth Edition 2020)), Table 1

Components	Type	Value	Form
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	TWA	4,3 mg/m3	
piperazine [liquid] (CAS 110-85-0)	STEL	1 ppm	
		0,3 mg/m3	
	TWA	0,1 mg/m3	
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	TWA	4 mg/m3	Respirable.
		10 mg/m3	Inhalable

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU

Components	Type	Value	
piperazine [liquid] (CAS 110-85-0)	STEL	0,3 mg/m3	
	TWA	0,1 mg/m3	

Biological limit values
Croatia. BELs (BGV). Regulation on Protection of Workers against Exposure to Dangerous Chemicals at Work, OELs and BELs, Annex IV (NN 91/2018), as amended

Components	Value	Determinant	Specimen	Sampling Time
4-tert-butylphenol (CAS 98-54-4)	2 mg/l	PTBP	Urine	*
	13,3 µmol/l	PTBP	Urine	*

* - For sampling details, please see the source document.

Germany. TRGS 903, BAT List (Biological Limit Values)

Components	Value	Determinant	Specimen	Sampling Time
4-tert-butylphenol (CAS 98-54-4)	2 mg/l	PTBP (nach Hydrolyse)	Urine	*

* - For sampling details, please see the source document.

Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Components	Value	Determinant	Specimen	Sampling Time
4-tert-butylphenol (CAS 98-54-4)	1,36 mg/g	p-tert-butylphenol	Creatinine in urine	*
	2 mg/l	p-tert-butylphenol	Urine	*

* - For sampling details, please see the source document.

Switzerland. SUVA Grenzwerte am Arbeitsplatz: Aktuelle BAT-Werte

Components	Value	Determinant	Specimen	Sampling Time
4-tert-butylphenol (CAS 98-54-4)	2 mg/l	p-tert-Butylphenol	Urine	*

* - For sampling details, please see the source document.

Recommended monitoring procedures	Follow standard monitoring procedures.
Derived no effect levels (DNELs)	Not available.
Predicted no effect concentrations (PNECs)	Not available.
Exposure guidelines	
Austria MAK: Skin designation	
4-tert-butylphenol (CAS 98-54-4)	Can be absorbed through the skin.
Belgium OELs: Skin designation	
1,3-Benzenedimethanamine (CAS 1477-55-0)	Can be absorbed through the skin.
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
Cyprus OEL: Skin designation	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
Czech Republic PELs: Skin designation	
Triethylamine (CAS 102-71-6)	Can be absorbed through the skin.
Denmark GV: Skin designation	
1,3-Benzenedimethanamine (CAS 1477-55-0)	Can be absorbed through the skin.
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
4-tert-butylphenol (CAS 98-54-4)	Can be absorbed through the skin.
Estonia OELs: Skin designation	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
Finland Exposure Limit Values: Skin designation	
1,3-Benzenedimethanamine (CAS 1477-55-0)	Can be absorbed through the skin.
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
Germany DFG MAK (advisory): Skin designation	
4-tert-butylphenol (CAS 98-54-4)	Can be absorbed through the skin.
Germany TRGS 900 Limit Values: Skin designation	
4-tert-butylphenol (CAS 98-54-4)	Can be absorbed through the skin.
Greece OEL: Skin designation	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
Hungary OELs: Skin designation	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
Iceland OELs: Skin designation	
1,3-Benzenedimethanamine (CAS 1477-55-0)	Can be absorbed through the skin.
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
4-tert-butylphenol (CAS 98-54-4)	Can be absorbed through the skin.
Ireland Exposure Limit Values: Skin designation	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
Italy OELs: Skin designation	
1,3-Benzenedimethanamine (CAS 1477-55-0)	Danger of cutaneous absorption
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Danger of cutaneous absorption
Lithuania OELs: Skin designation	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
Norway Exposure Limit Values: Skin designation	
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.
Portugal VLEs Norm on Occupational Exposure: Skin designation	
1,3-Benzenedimethanamine (CAS 1477-55-0)	Can be absorbed through the skin.
2,2'-iminodiethylamine; diethylenetriamine (CAS 111-40-0)	Can be absorbed through the skin.

Romania OELs: Skin designation2,2'-iminodiethylamine; diethylenetriamine
(CAS 111-40-0)

Can be absorbed through the skin.

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

4-tert-butylphenol (CAS 98-54-4)

Can be absorbed through the skin.

Spain OELs: Skin designation2,2'-iminodiethylamine; diethylenetriamine
(CAS 111-40-0)

Can be absorbed through the skin.

Sweden Threshold Limit Values: Skin designation2,2'-iminodiethylamine; diethylenetriamine
(CAS 111-40-0)

Can be absorbed through the skin.

Triethylamine (CAS 102-71-6)

Can be absorbed through the skin.

Switzerland SUVA Limit Values at the Workplace: Skin designation

1,3-Benzenedimethanamine (CAS 1477-55-0)

Can be absorbed through the skin.

2,2'-iminodiethylamine; diethylenetriamine
(CAS 111-40-0)

Can be absorbed through the skin.

UK EH40 WEL: Skin designation2,2'-iminodiethylamine; diethylenetriamine
(CAS 111-40-0)

Can be absorbed through the skin.

8.2. Exposure controls**Appropriate engineering controls**

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment**General information**

Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection

Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection**- Hand protection**

Wear appropriate chemical resistant gloves.

- Other

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

Hygiene measures

Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

Environmental exposure controls

Inform appropriate managerial or supervisory personnel of all environmental releases. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	Liquid.
Form	Liquid.
Color	Amber.
Odor	Ammoniacal. fishy
Melting point/freezing point	-38,2 °F (-39 °C) estimated
Boiling point or initial boiling point and boiling range	525,2 °F (274 °C) estimated
Flammability	Not applicable.
Flash point	212,0 °F (100,0 °C) estimated
Auto-ignition temperature	750,02 °F (398,9 °C) estimated
Decomposition temperature	Not available.
pH	Not available.
Kinematic viscosity	Not available.

Solubility

Solubility (water)	Not available.
Partition coefficient (n-octanol/water) (log value)	Not available.
Vapor pressure	0,15 hPa estimated
Density and/or relative density	
Density	1,01 g/cm3 estimated
Vapor density	Not available.
Particle characteristics	Not available.

9.2. Other information

9.2.1. Information with regard to physical hazard classes No relevant additional information available.

9.2.2. Other safety characteristics

Specific gravity	1,01 estimated
VOC	0,3 % estimated

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Contact with incompatible materials.
10.5. Incompatible materials	Strong acids. Alkaline metals.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed.

Symptoms Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

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

Acute toxicity Harmful if swallowed.

Components	Species	Test Results
piperazine [liquid] (CAS 110-85-0)		
Acute		
Oral		
LD50	Rat	2050 mg/kg
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)		
Acute		
Dermal		
LD50	Hamster	≥ 10000 mg/kg
Oral		
LD50	Rat	> 10000 mg/kg
Triethylamine (CAS 102-71-6)		
Acute		
Dermal		
LD50	Rabbit	> 20000 mg/kg
Oral		
LD50	Rat	8 g/kg

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory sensitization	Due to partial or complete lack of data the classification is not possible.
Skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.
Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)	
4-tert-butylphenol (CAS 98-54-4)	
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	
IARC Monographs. Overall Evaluation of Carcinogenicity	
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter ≤ 10 µm] (CAS 13463-67-7)	
Triethylamine (CAS 102-71-6)	
2B Possibly carcinogenic to humans.	
3 Not classifiable as to carcinogenicity to humans.	
Reproductive toxicity	Suspected of damaging fertility or the unborn child.
Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)	
4-tert-butylphenol (CAS 98-54-4)	
piperazine [liquid] (CAS 110-85-0)	
Toxic for reproduction - category 2.	
Toxic for reproduction - category 2.	
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information	No information available.
11.2. Information on other hazards	
Endocrine disrupting properties	This mixture does not contain any substances having endocrine disrupting properties with respect to human health as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity	Harmful to aquatic life with long lasting effects. Based on available data, the classification criteria are not met for hazardous to the aquatic environment, acute hazard.
12.2. Persistence and degradability	No data is available on the degradability of any ingredients in the mixture.
12.3. Bioaccumulative potential	
Partition coefficient n-octanol/water (log Kow)	
2-piperazin-1-ylethylamine	-1,57
piperazine [liquid]	-1,5
Triethylamine	-1
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	This mixture does not contain substances assessed to be vPvB / PBT according to Regulation (EC) No 1907/2006, Annex XIII.
12.6. Endocrine disrupting properties	This mixture does not contain any substances having endocrine disrupting properties with respect to the environment as assessed in accordance with the criteria set out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605, at a concentration equal to or greater than 0.1% by weight.
12.7. Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. UN number	UN3267
14.2. UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (1,3-Benzenedimethanamine, 4-tert-butylphenol)
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Hazard No. (ADR)	80
Tunnel restriction code	E
14.4. Packing group	III
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number	UN3267
14.2. UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (1,3-Benzenedimethanamine, 4-tert-butylphenol)
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
14.4. Packing group	III
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number	UN3267
14.2. UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (1,3-Benzenedimethanamine, 4-tert-butylphenol)
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
14.4. Packing group	III
14.5. Environmental hazards	No.
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number	UN3267
14.2. UN proper shipping name	Corrosive liquid, basic, organic, n.o.s. (1,3-Benzenedimethanamine, 4-tert-butylphenol), Limited Quantity
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	-
14.4. Packing group	III
14.5. Environmental hazards	No.
ERG Code	8L
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

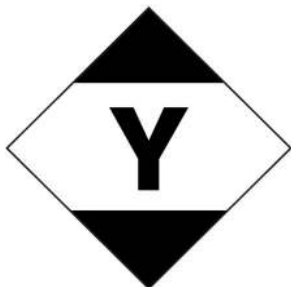
IMDG

14.1. UN number	UN3267
14.2. UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (1,3-Benzenedimethanamine, 4-tert-butylphenol), Limited Quantity
14.3. Transport hazard class(es)	
Class	8
Subsidiary risk	-
14.4. Packing group	III
14.5. Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-B
14.6. Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
14.7. Maritime transport in bulk according to IMO instruments	Not established.

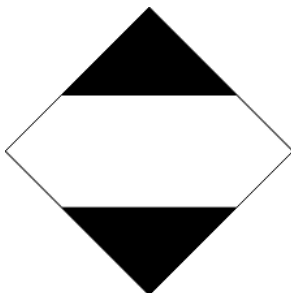
ADN; ADR; RID



IATA



IMDG



SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended
Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended
Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended
titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$] (CAS 13463-67-7)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA
4-tert-butylphenol (CAS 98-54-4)

UFI:

Austria: 7M30-30T6-E00J-M3KD
Belgium: 7M30-30T6-E00J-M3KD
Bulgaria: 7M30-30T6-E00J-M3KD
Croatia: 7M30-30T6-E00J-M3KD
Cyprus: 7M30-30T6-E00J-M3KD
Czech Republic: 7M30-30T6-E00J-M3KD
Denmark: 7M30-30T6-E00J-M3KD
Estonia: 7M30-30T6-E00J-M3KD
EU: 7M30-30T6-E00J-M3KD
Finland: 7M30-30T6-E00J-M3KD
France: 7M30-30T6-E00J-M3KD
Germany: 7M30-30T6-E00J-M3KD
Greece: 7M30-30T6-E00J-M3KD
Hungary: 7M30-30T6-E00J-M3KD
Iceland: 7M30-30T6-E00J-M3KD
Ireland: 7M30-30T6-E00J-M3KD
Italy: 7M30-30T6-E00J-M3KD
Latvia: 7M30-30T6-E00J-M3KD
Lithuania: 7M30-30T6-E00J-M3KD
Luxembourg: 7M30-30T6-E00J-M3KD
Malta: 7M30-30T6-E00J-M3KD
Netherlands: 7M30-30T6-E00J-M3KD
Norway: 7M30-30T6-E00J-M3KD
Poland: 7M30-30T6-E00J-M3KD
Portugal: 7M30-30T6-E00J-M3KD
Romania: 7M30-30T6-E00J-M3KD
Slovakia: 7M30-30T6-E00J-M3KD
Slovenia: 7M30-30T6-E00J-M3KD
Spain: 7M30-30T6-E00J-M3KD
Sweden: 7M30-30T6-E00J-M3KD

Authorizations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended
Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended
- Conditions of restriction given for the associated entry number should be considered
Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended

4-tert-butylphenol (CAS 98-54-4)
piperazine [liquid] (CAS 110-85-0)

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure.

Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

Contains a substance which is included on the TRGS 905 list of carcinogenic, germ cell mutagenic and reproductive toxic substances

titanium dioxide [in powder form containing 1 % or more of particles with aerodynamic diameter $\leq 10 \mu\text{m}$] (CAS 13463-67-7)	Anorganische Faserstäube, soweit nicht erwähnt (ausgenommen Gipsfasern und Wollastonitfasern)
---	---

France regulations

France INRS Table of Occupational Diseases

Not regulated.

Product registration number

Austria	UFI: 7M30-30T6-E00J-M3KD
Belgium	UFI: 7M30-30T6-E00J-M3KD
Czech Republic	UFI: 7M30-30T6-E00J-M3KD
Denmark	UFI: 7M30-30T6-E00J-M3KD
European Union	UFI: 7M30-30T6-E00J-M3KD
Finland	UFI: 7M30-30T6-E00J-M3KD
France	UFI: 7M30-30T6-E00J-M3KD
Germany	UFI: 7M30-30T6-E00J-M3KD
Greece	UFI: 7M30-30T6-E00J-M3KD
Hungary	UFI: 7M30-30T6-E00J-M3KD
Italy	UFI: 7M30-30T6-E00J-M3KD
Netherlands	UFI: 7M30-30T6-E00J-M3KD
Norway	UFI: 7M30-30T6-E00J-M3KD
Poland	UFI: 7M30-30T6-E00J-M3KD
Portugal	UFI: 7M30-30T6-E00J-M3KD
Slovakia	UFI: 7M30-30T6-E00J-M3KD
Slovenia	UFI: 7M30-30T6-E00J-M3KD
Spain	UFI: 7M30-30T6-E00J-M3KD
Sweden	UFI: 7M30-30T6-E00J-M3KD
Switzerland	UFI: 7M30-30T6-E00J-M3KD

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information**List of abbreviations**

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.
AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany).
CAS: Chemical Abstract Service.
CEN: European Committee for Standardization.
IATA: International Air Transport Association.
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.
IMDG: International Maritime Dangerous Goods.
MAC: Maximum Allowed Concentration.
MARPOL: International Convention for the Prevention of Pollution from Ships.
PBT: Persistent, bioaccumulative and toxic.
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
STEL: Short term exposure limit.
TLV: Threshold Limit Value.
TWA: Time Weighted Average.
VLE: Exposure Limit Value.
VME: Exposure Average Value.
vPvB: Very persistent and very bioaccumulative.

References

Not available.

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any statements, which are not written out in full under sections 2 to 15

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H351 Suspected of causing cancer.
H361f Suspected of damaging fertility.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Revision information

None.

Training information

Follow training instructions when handling this material.

Disclaimer

ITW Performance Polymers cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.