

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by UK REACH Regulation SI 2019/758 - United Kingdom (UK)

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

#### 1.1 Product identifier

Product name : Hempel's Curing Agent 97531  
Product identity : 9753100000, 00138858  
Product type : Curing agent

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

Field of application : used only as part of two- or multi component products  
Ready-for-use mixture : (See base component)  
Identified uses : Industrial applications, Used by spraying.

#### 1.3 Details of the supplier of the safety data sheet

Company details : Hempel UK Ltd  
Berwyn House, The Pavilions  
Llantarnam Park  
Cwmbran  
South Wales NP44 3FD  
Telephone: 01633 833600  
hempel@hempel.com

#### 1.4 Emergency telephone number

Emergency telephone number (with hours of operation)  
UK: **01633 833600** (08.00 - 17.00)  
Ireland: **01 809 2166** (National Poisons Information Centre, Monday-Sunday; 08:00-22:00)  
See Section 4 of the safety data sheet (first aid measures).

Date of issue : 17 January 2024  
Date of previous issue : 22 December 2022.

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

Product definition : Mixture

#### Classification according to UK CLP/GHS

Flam. Liq. 3, H226	FLAMMABLE LIQUIDS
Acute Tox. 4, H302	ACUTE TOXICITY (oral)
Skin Corr. 1B, H314	SKIN CORROSION/IRRITATION
Eye Dam. 1, H318	SERIOUS EYE DAMAGE/EYE IRRITATION
Skin Sens. 1, H317	SKIN SENSITISATION
Repr. 2, H361	REPRODUCTIVE TOXICITY
STOT RE 2, H373	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE
Aquatic Chronic 1, H410	LONG-TERM (CHRONIC) AQUATIC HAZARD

See Section 11 for more detailed information on health effects and symptoms.

#### 2.2 Label elements

Hazard pictograms :



Signal word : **Danger**

Hazard statements :  
H226 - Flammable liquid and vapour.  
H302 - Harmful if swallowed.  
H314 - Causes severe skin burns and eye damage.  
H317 - May cause an allergic skin reaction.  
H361 - Suspected of damaging fertility or the unborn child.  
H373 - May cause damage to organs through prolonged or repeated exposure.  
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention : Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment. Do not breathe vapor, mist or spray.

### SECTION 2: Hazards identification

Response : Collect spillage. IF INHALED: Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Hazardous ingredients :  tert-butylphenol  
 4,4'-methylene-bis-cyclohexanamine  
 m-Xylylene-diamine  
 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 4,4'-methylenebis(cyclohexylamine)  
 reactionproduct of MXDA and p-tert-butylphenol with mannich base  
 2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine

#### Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

#### 2.3 Other hazards

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : None known.

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Product/ingredient name	Identifiers	%	GB CLP Classification	Type
<input checked="" type="checkbox"/> Benzyl alcohol	REACH #: 01-2119492630-38 EC: 202-859-9 CAS: 100-51-6 Index: 603-057-00-5	≥10 - ≤25	Acute Tox. 4, H302 Acute Tox. 4, H332 Eye Irrit. 2, H319	[1]
4-tert-butylphenol	REACH #: 01-2119489419-21 EC: 202-679-0 CAS: 98-54-4 Index: 604-090-00-8	≥10 - ≤25	Skin Irrit. 2, H315 Eye Dam. 1, H318 Repr. 2, H361f Aquatic Chronic 1, H410 (M=1)	[1] [3]
4,4'-methylene-bis-cyclohexanamine	REACH #: 01-2119541673-38 EC: 217-168-8 CAS: 1761-71-3	≥10 - ≤25	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT RE 2, H373 (liver) (oral)	[1]
m-Xylylene-diamine	REACH #: 01-2119480150-50 EC: 216-032-5 CAS: 1477-55-0	≥10 - ≤22	Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1B, H317 Aquatic Chronic 3, H412 EUH071	[1] [2]
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 4,4'-methylenebis(cyclohexylamine)	REACH #: 01-2120769907-34 EC: 500-103-5 CAS: 38294-67-6	≥10 - <25	Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1]
reactionproduct of MXDA and p-tert-butylphenol with mannich base	REACH #: 01-2119977133-36 EC: 939-071-6 CAS: 133548-08-0	≥10 - <20	Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Repr. 2, H361 STOT SE 3, H335 Aquatic Chronic 2, H411	[1]
xylene	REACH #: 01-2119488216-32 EC: 215-535-7 CAS: 1330-20-7 Index: 601-022-00-9	≤10	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315	[1] [2]
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	REACH #: 01-2119560598-25 EC: 247-063-2 CAS: 25513-64-8	<5	Acute Tox. 4, H302 Skin Corr. 1A, H314 Eye Dam. 1, H318 Skin Sens. 1A, H317	[1]
ethylbenzene	REACH #: 01-2119489370-35 EC: 202-849-4 CAS: 100-41-4	≤2.9	Flam. Liq. 2, H225 Acute Tox. 4, H332 STOT RE 2, H373 (hearing organs)	[1] [2]

### SECTION 3: Composition/information on ingredients

	Index: 601-023-00-4		Asp. Tox. 1, H304	
--	---------------------	--	-------------------	--

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

#### Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit, see section 8.

[3] Substance of equivalent concern

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

General :	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 112 and give immediate treatment (first aid).
Eye contact :	Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek immediate medical attention/advice.
Inhalation :	Remove to fresh air and keep at rest in a position comfortable for breathing. Give nothing by mouth. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately.
Skin contact :	Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners. In case of burns flush with water until the pain ceases. While flushing remove clothing from the affected area unless it is burnt into the skin. If hospital treatment is necessary flushing must continue during transfer and until the hospital staff takes over the treatment.
Ingestion :	If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat.
Protection of first-aiders :	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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

##### Potential acute health effects

Eye contact :	Causes serious eye damage.
Inhalation :	No known significant effects or critical hazards.
Skin contact :	Causes severe burns. May cause an allergic skin reaction.
Ingestion :	Harmful if swallowed.

##### Over-exposure signs/symptoms

Eye contact :	Adverse symptoms may include the following: pain watering redness
Inhalation :	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
Skin contact :	Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced foetal weight increase in foetal deaths skeletal malformations
Ingestion :	Adverse symptoms may include the following: stomach pains reduced foetal weight increase in foetal deaths skeletal malformations

### SECTION 4: First aid measures

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

Notes to physician :	If gasses have been inhaled, from the decomposition of the product, symptoms may be delayed. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments :	No specific treatment.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

Extinguishing media :	Recommended: alcohol resistant foam, CO <sub>2</sub> , powders, water spray. Not to be used : waterjet.
-----------------------	--

#### 5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture :	Flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous combustion products :	Decomposition products may include the following materials: carbon oxides nitrogen oxides halogenated compounds metal oxide/oxides

#### 5.3 Advice for firefighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid all direct contact with the spilled material. Exclude sources of ignition and be aware of explosion hazard. Ventilate the area. Avoid breathing vapour or mist. Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

#### 6.2 Environmental precautions

✓ Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

#### 6.3 Methods and material for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilt product.

#### 6.4 Reference to other sections

See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should be used only in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. No sparking tools should be used.

Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in accordance with local regulations. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

**7.3 Specific end use(s)**

See separate Product Data Sheet for recommendations or industrial sector specific solutions.

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

Product/ingredient name	Exposure limit values
m-Xylylene-diamine xylene ethylbenzene	<p><b>EU OEL (Europe, 2/2010). Absorbed through skin.</b>                      (ACGIH) C: 0.1 mg/m<sup>3</sup></p> <p><b>EH40/2005 WELs (United Kingdom (UK), 1/2020). [xylene, o-,m-,p- or mixed isomers] Absorbed through skin.</b>                      STEL: 441 mg/m<sup>3</sup> 15 minutes.                      TWA: 50 ppm 8 hours.                      TWA: 220 mg/m<sup>3</sup> 8 hours.                      STEL: 100 ppm 15 minutes.</p> <p><b>EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin.</b>                      STEL: 552 mg/m<sup>3</sup> 15 minutes.                      STEL: 125 ppm 15 minutes.                      TWA: 441 mg/m<sup>3</sup> 8 hours.                      TWA: 100 ppm 8 hours.</p>

**Recommended monitoring procedures**

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Derived effect levels**

Product/ingredient name	Type	Exposure	Value	Population	Effects
Benzyl alcohol	DNEL	Long term Inhalation	22 mg/m <sup>3</sup>	Workers	Systemic
4-tert-butylphenol	DNEL	Long term Dermal	8 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	0.071 mg/kg	Workers	Systemic
4,4'-methylene-bis-cyclohexanamine	DNEL	Long term Inhalation	0.5 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Inhalation	1 mg/m <sup>3</sup>	Workers	Systemic
m-Xylylene-diamine	DNEL	Long term Dermal	0.1 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	0.33 mg/kg bw/day	Workers	Systemic
xylene	DNEL	Long term Inhalation	1.2 mg/m <sup>3</sup>	Workers	Systemic
	DNEL	Long term Inhalation	77 mg/m <sup>3</sup>	Workers	Systemic
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine ethylbenzene	DNEL	Long term Dermal	212 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Oral	0.05 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	180 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	77 mg/m <sup>3</sup>	Workers	Systemic

**Predicted effect concentrations**

**SECTION 8: Exposure controls/personal protection**

Product/ingredient name	Compartment Detail	Value	Method Detail
benzyl alcohol	Soil	0.456 mg/kg wwt	Assessment Factors
	Sewage Treatment Plant	39 mg/l	Assessment Factors
	Sediment	5.27 mg/kg wwt	Assessment Factors
	Marine water sediment	0.527 mg/kg wwt	Assessment Factors
	Marine	0.1 mg/l	Assessment Factors
4-tert-butylphenol	Fresh water	1 mg/l	Assessment Factors
	Fresh water	0.01 mg/l	-
	Marine water	0.001 mg/l	-
	Fresh water sediment	0.975 mg/kg dwt	-
	Marine water sediment	0.0975 mg/kg dwt	-
4,4'-methylene-bis-cyclohexanamine	Sewage Treatment Plant	1.5 mg/l	-
	Fresh water	0.08 mg/l	-
	Marine water	0.008 mg/l	-
	Sewage Treatment Plant	3.2 mg/l	-
	Soil	27.2 mg/kg	-
m-Xylylene-diamine	Marine water sediment	13.7 mg/kg	-
	Fresh water sediment	137 mg/kg	-
	Fresh water	0.094 mg/l	-
	Marine water	0.0094 mg/l	-
	Fresh water sediment	0.43 mg/kg	-
xylene	Marine water sediment	0.043 mg/kg	-
	Soil	0.045 mg/kg	-
	Sewage Treatment Plant	10 mg/l	-
	Fresh water	0.327 mg/l	-
	Marine water	0.327 mg/l	-
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	Fresh water sediment	12.46 mg/kg	-
	Marine water sediment	12.46 mg/kg	-
	Soil	2.31 mg/kg	-
	Sewage Treatment Plant	6.68 mg/l	-
	Soil	10 mg/kg	-
ethylbenzene	Marine water	0.01 mg/l	-
	Sewage Treatment Plant	72 mg/l	-
	Fresh water	0.102 mg/l	-
	Fresh water sediment	0.622 mg/kg	-
	Marine water sediment	0.062 mg/kg	-
	Fresh water	0.1 mg/l	-
	Marine water	0.01 mg/l	-
	Sewage Treatment Plant	9.6 mg/l	-
	Fresh water sediment	13.7 mg/kg	-
	Soil	2.68 mg/kg	-

**8.2 Exposure controls**

**Appropriate engineering controls**

Arrange sufficient ventilation by local exhaust ventilation and good general ventilation to keep the airborne concentrations of vapors or dust lowest possible and below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Individual protection measures**

General : Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. Safety eyewear should be used when there is a likelihood of exposure.

Hygiene measures : Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection : Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances.

Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type. Below listed glove(s) should be regarded as generic advice:

Recommended: Silver Shield / Barrier / 4H gloves, polyvinyl alcohol (PVA), Viton®  
 May be used: nitrile rubber, neoprene rubber  
 Short term exposure: butyl rubber, natural rubber (latex), polyvinyl chloride (PVC)

### SECTION 8: Exposure controls/personal protection

Body protection :	Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product. Wear suitable protective clothing. Always wear protective clothing when spraying. Chemical-resistant apron.
Respiratory protection :	When the product is applied by spraying and for continuous or prolonged work always wear an air-fed respirator e.g. hood with supply of fresh or compressed air or a full face, powered air purifying filter. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If working areas have insufficient ventilation: When the product is applied by means that will not generate an aerosol such as, brush or roller wear half or totally covering mask equipped with gas filter of type A, when grinding use particle filter of type P. Be sure to use an approved/certified respirator or equivalent.

#### Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will 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.
Colour :	Transparent
Odour :	Solvent-like
pH :	Testing not relevant or not possible due to nature of the product.
Melting point/freezing point :	Testing not relevant or not possible due to nature of the product.
Boiling point/boiling range :	Testing not relevant or not possible due to nature of the product.
Flash point :	Closed cup: 23°C (73.4°F)
Evaporation rate :	Testing not relevant or not possible due to nature of the product.
Flammability :	Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Lower and upper explosive (flammable) limits :	0.8 - 13 vol %
Vapour pressure :	Testing not relevant or not possible due to nature of the product.
Vapour density :	Testing not relevant or not possible due to nature of the product.
Specific gravity :	1.02 g/cm <sup>3</sup>
Partition coefficient (LogKow) :	Testing not relevant or not possible due to nature of the product.
Auto-ignition temperature :	Lowest known value: 300°C (572°F) (4,4'-methylene-bis-cyclohexanamine).
Decomposition temperature :	Testing not relevant or not possible due to nature of the product.
Viscosity :	Aspiration hazard (H304) Not classified. Testing not relevant due to nature of the product.
Explosive properties :	Slightly explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Oxidising properties :	Testing not relevant or not possible due to nature of the product.

#### 9.2 Other information

Solvent(s) % by weight :	Weighted average: 38 %
Water % by weight :	Weighted average: 0 %
VOC content :	248.4 g/l
TOC Content :	Weighted average: 205 g/l
Solvent Gas :	Weighted average: 0.067 m <sup>3</sup> /l

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

#### 10.2 Chemical stability

The product is stable.

#### 10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

#### 10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

#### 10.5 Incompatible materials

Highly reactive or incompatible with the following materials: oxidising materials.  
Reactive or incompatible with the following materials: reducing materials.

#### 10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides nitrogen oxides halogenated compounds metal oxide/oxides

### SECTION 11: Toxicological information

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

Exposure to component solvent vapor concentrations may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Accidental swallowing may cause stomach pain. Chemical lung inflammation may occur if the product is taken into the lungs via vomiting.

Inhalation of a corrosive substance may result in health effects such as stinging, coughing and in extreme cases, dyspnoea or loss of consciousness with a risk of lung damage, possibly lung oedema. Cauterization of skin and mucous membrane. If splashed in the eyes, the liquid may cause irreversible damage. Accidental swallowing may cause stinging and cauterization to mouth, oesophagus and stomach. Symptoms and signs include bloody vomiting, chock and loss of consciousness.

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzyl alcohol	LC50 Inhalation Dusts and mists	Rat	>4178 mg/m <sup>3</sup>	4 hours
	LD50 Oral	Rat	1230 mg/kg	-
4-tert-butylphenol	LC50 Inhalation Dusts and mists	Rat	>5600 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	2288 mg/kg	-
4,4'-methylene-bis-cyclohexanamine	LD50 Oral	Rat	2951 mg/kg	-
	LD50 Dermal	Rabbit	2110 mg/kg	-
m-Xylylene-diamine	LD50 Oral	Rat	380 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	1.34 mg/l	4 hours
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 4,4'-methylenebis(cyclohexylamine) xylene	LD50 Dermal	Rabbit	>3100 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	LD50 Oral	Rat	500 - 2000 mg/kg	-
	LC50 Inhalation Gas.	Rat	5000 ppm	4 hours
ethylbenzene	LC50 Inhalation Vapour	Rat	6350 ppm	4 hours
	LD50 Dermal	Rabbit	>4200 mg/kg	-
	LD50 Oral	Rat	3523 mg/kg	-
	LD50 Oral	Rat	910 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3500 mg/kg	-

#### Acute toxicity estimates



### SECTION 11: Toxicological information

Product/ingredient name	Oral mg/kg	Dermal mg/kg	Inhalation (gases) ppm	Inhalation (vapours) mg/l	Inhalation (dusts and mists) mg/l
Hempel's Curing Agent 97531	1127.8	15834.5	58554.1	37.9	
benzyl alcohol	1230			11	
4-tert-butylphenol	2951	2288			
4,4'-methylene-bis-cyclohexanamine	380	2110			
m-Xylylene-diamine	930			11	
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 4,4'-methylenebis(cyclohexylamine)	500				
xylene	3523	1100	5000		
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	910				
ethylbenzene	3500		4500	11	

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure
benzyl alcohol	Eyes - Visible necrosis Skin - Mild irritant	Rabbit Rabbit	- -	- -
4-tert-butylphenol	Eyes - Severe irritant Skin - Mild irritant	Rabbit Rabbit	- -	24 hours 50 Micrograms 24 hours 500 milligrams
4,4'-methylene-bis-cyclohexanamine	Eyes - Severe irritant Skin - Severe irritant	Rabbit Rabbit	- -	24 hours 10 microliters -
m-Xylylene-diamine	Eyes - Severe irritant Respiratory - Severe irritant Skin - Severe irritant	Rabbit Rabbit Rabbit	- - -	24 hours 50 Micrograms - 24 hours 750 Micrograms
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 4,4'-methylenebis(cyclohexylamine)				
xylene	Eyes - Severe irritant Skin - Irritant Skin - Moderate irritant	Rabbit Rabbit Rabbit	- - -	24 hours 5 milligrams - 24 hours 500 milligrams
ethylbenzene	Eyes - Mild irritant Respiratory - Mild irritant Skin - Mild irritant	Rabbit Rabbit Rabbit	- - -	- - 24 hours 15 milligrams

#### Sensitiser

Product/ingredient name	Route of exposure	Species	Result
4,4'-methylene-bis-cyclohexanamine	skin	Guinea pig	Sensitising
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 4,4'-methylenebis(cyclohexylamine)	skin	Mouse	Sensitising

#### Mutagenic effects

No known significant effects or critical hazards.

#### Carcinogenicity

No known significant effects or critical hazards.

#### Reproductive toxicity

Suspected of damaging fertility.

#### Teratogenic effects

Suspected of damaging the unborn child.

#### Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
reactionproduct of MXDA and p-tert-butylphenol with mannich base	Category 3		Respiratory tract irritation

#### Specific target organ toxicity (repeated exposure)

### SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
4,4'-methylene-bis-cyclohexanamine ethylbenzene	Category 2 Category 2	oral -	liver hearing organs

#### Aspiration hazard

Product/ingredient name	Result
ethylbenzene	ASPIRATION HAZARD - Category 1

#### Information on likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

#### Potential chronic health effects

No known significant effects or critical hazards.

Sensitisation : Contains 4,4'-methylene-bis-cyclohexanamine, m-Xylylene-diamine, 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 4,4'-methylenebis(cyclohexylamine). May produce an allergic reaction.

#### 11.2 Information on other hazards

Other information : No additional known significant effects or critical hazards.

### SECTION 12: Ecological information

#### 12.1 Toxicity

Do not allow to enter drains or watercourses. Very toxic to aquatic life with long lasting effects.

Product/ingredient name	Result	Species	Exposure
benzyl alcohol	Acute EC50 230 mg/l	Daphnia	48 hours
	Acute IC50 770 mg/l	Algae	72 hours
	Acute LC50 460 mg/l	Fish	96 hours
4-tert-butylphenol	Acute EC50 14 mg/l	Algae	72 hours
	Acute EC50 3.4 mg/l	Daphnia	48 hours
	Acute LC50 1.6 mg/l	Fish	48 hours
	Acute LC50 5140 - 5620 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 2.3 mg/l Fresh water	Fish - Cyprinus carpio - Adult	28 days
4,4'-methylene-bis-cyclohexanamine	Acute EC50 140 mg/l	Algae	72 hours
	Acute EC50 6.84 mg/l	Daphnia	48 hours
	Acute LC50 >100 mg/l	Fish	96 hours
m-Xylylene-diamine	Acute EC50 20.3 mg/l	Algae	72 hours
	Acute EC50 15.2 mg/l	Daphnia - Daphnia	48 hours
	Acute LC50 87.6 mg/l	Fish - Leuciscus idus	96 hours
	Acute NOEC 4.7 mg/l	Daphnia	21 days
	Acute LC50 13 mg/l	Fish	96 hours
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 4,4'- methylenebis(cyclohexylamine) reactionproduct of MXDA and p-tert- butylphenol with mannich base	Acute LC50 4.94 mg/l	Algae	72 hours
	Acute LC50 8.98 mg/l	Daphnia	48 hours
	Acute LC50 7.9 mg/l	Fish	96 hours
	Acute EC50 29.5 mg/l	Algae	72 hours
2,2,4(or 2,4,4)-trimethylhexane- 1,6-diamine ethylbenzene	Chronic NOEC <1000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours

#### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
benzyl alcohol	OECD 301A 301A Ready Biodegradability - DOC Die-Away Test	95 - 97 % - Readily - 21 days	-	-
	OECD 301C 301C Ready Biodegradability - Modified MITI Test (I)	92 - 96 % - Readily - 14 days	-	-
4-tert-butylphenol	OECD 301A Ready Biodegradability - DOC Die-Away Test	98 % - Readily - 28 days	-	-
m-Xylylene-diamine	OECD 301B 301B Ready Biodegradability - CO2 Evolution Test	49 % - Inherent - 28 days	-	-

### SECTION 12: Ecological information

xylene	OECD 301F Ready Biodegradability - Manometric Respirometry Test	90 - 98 % - Readily - 28 days	-	-
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	-	>60 % - Readily - 28 days	-	-
ethylbenzene	EU EC no. 440/2008, Annex C.4-A	7 % - Not readily - 28 days	-	-
	-	>70 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Benzyl alcohol	-	-	Readily
4-tert-butylphenol	-	-	Readily
m-Xylylene-diamine	-	-	Inherent
xylene	-	-	Readily
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	-	-	Not readily
ethylbenzene	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Benzyl alcohol	0.87	1.37	low
4-tert-butylphenol	3	44 - 48	low
4,4'-methylene-bis-cyclohexanamine	2.03	-	low
m-Xylylene-diamine	0.18	2.69	low
xylene	3.12	8.1 - 25.9	low
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	-0.3	-	low
ethylbenzene	3.6	-	low

### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : No known data available in our database.  
 Mobility : No known data available in our database.

### 12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.							

### 12.6 Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

The generation of waste should be avoided or minimised wherever possible. Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Spillage, remains, discarded clothes and similar should be discarded in a fireproof container.

European waste catalogue no. (EWC) is given below.

European waste catalogue (EWC) : 08 01 11\*









### Packaging

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

## SECTION 14: Transport information

Transport may take place according to national regulation or ADR for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

### SECTION 14: Transport information

	14.1 UN / ID no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
<b>ADR/RID Class</b>	UN3470	PAINT, CORROSIVE, FLAMMABLE	8 3   	II	Yes.	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Tunnel code</b> (D/E)
<b>IMDG Class</b>	UN3470	PAINT, CORROSIVE, FLAMMABLE. (4-tert-butylphenol)	8 3   	II	Yes.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Emergency schedules</b> F-E, S-C
<b>IATA Class</b>	UN3470	PAINT, CORROSIVE, FLAMMABLE	8 3  	II	Yes.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

PG\* : Packing group

Env.\* : Environmental hazards

#### 14.6 Special precautions for user

**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

#### 14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

### SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH) Annex XIV - List of substances subject to authorisation - Substances of very high concern

##### Annex XIV

None of the components are listed.

##### Substances of very high concern

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
4-tert-butylphenol	Endocrine disrupting properties for environment	Candidate	ED/71/2019, EU/2019/1194	7/16/2019

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

#### Other EU regulations

##### Seveso category

This product is controlled under the Seveso III Directive.

Seveso category
P5c: Flammable liquids 2 and 3 not falling under P5a or P5b E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1

#### 15.2 Chemical safety assessment



### SECTION 16: Other information

Abbreviations and acronyms :

ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 EUH statement = CLP-specific Hazard statement  
 RRN = REACH Registration Number  
 DNEL = Derived No Effect Level  
 PNEC = Predicted No Effect Concentration

### SECTION 16: Other information

Full text of abbreviated H statements :	H225 H226 H302 H304 H312 H314 H315 H317 H318 H319 H332 H335 H361 H361f H373 H400 H410 H411 H412 EUH071	Highly flammable liquid and vapour. Flammable liquid and vapour. Harmful if swallowed. May be fatal if swallowed and enters airways. Harmful in contact with skin. Causes severe skin burns and eye damage. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Suspected of damaging fertility or the unborn child. Suspected of damaging fertility. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects. Toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects. Corrosive to the respiratory tract.
---	---	--

Full text of classifications [CLP/GHS] :	Acute Tox. 4 Aquatic Acute 1 Aquatic Chronic 1 Aquatic Chronic 2 Aquatic Chronic 3 Asp. Tox. 1 Eye Dam. 1 Eye Irrit. 2 Flam. Liq. 2 Flam. Liq. 3 Repr. 2 Skin Corr. 1A Skin Corr. 1B Skin Corr. 1C Skin Irrit. 2 Skin Sens. 1 Skin Sens. 1A Skin Sens. 1B STOT RE 2 STOT SE 3	ACUTE TOXICITY - Category 4 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 ASPIRATION HAZARD - Category 1 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 FLAMMABLE LIQUIDS - Category 2 FLAMMABLE LIQUIDS - Category 3 REPRODUCTIVE TOXICITY - Category 2 SKIN CORROSION/IRRITATION - Category 1A SKIN CORROSION/IRRITATION - Category 1B SKIN CORROSION/IRRITATION - Category 1C SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITISATION - Category 1 SKIN SENSITISATION - Category 1A SKIN SENSITISATION - Category 1B SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3
--	--	--

Classification	Justification
FLAMMABLE LIQUIDS ACUTE TOXICITY (oral) SKIN CORROSION/IRRITATION SERIOUS EYE DAMAGE/EYE IRRITATION SKIN SENSITISATION REPRODUCTIVE TOXICITY SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE LONG-TERM (CHRONIC) AQUATIC HAZARD	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

#### Notice to reader

 Indicates information that has changed from previously issued version.

The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical performance or suitability for particular applications.

It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.

# Safe Use of Mixture Information

## Hempel's Curing Agent 97531



This document is intended to communicate the conditions of safe use for the product and should always be read in combination with the product's Safety Data Sheet and labels.

### General description of the process covered

Indoor or outdoor spray painting by professionals for specialist applications, with good general room ventilation plus respiratory protection

**This safe use information is linked to** : Professional spray painting, near-industrial setting  
Expert judgment

**Sector(s) of use** : Industrial uses - Professional uses

**Product category(ies)** : Coatings and paints, thinners, paint removers

### Operational conditions

**Place of use** : Indoor or outdoor use

**Range of application/Process conditions** : Assumes a good standard of occupational hygiene and safety management has been implemented. Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

**Others** : Depending on actual conditions of application. Please consult your local HEMPEL representative for further advise.

### Risk management measures (RMM)

Contributing activity	Process category (ies)	Maximum duration	Ventilation		Respiratory	Eye	Hands
			Type	air changes per hour			
Preparation of material for application	PROC05	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Loading of application equipment and handling of coated parts before curing	PROC08b	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Industrial application of coatings by spraying	PROC07	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Use a properly fitted, air-purifying or air-fed respirator. EN 14594 with an assigned protection factor of at least 20.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Film formation - force drying, stoving and other technologies	PROC04	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	None	Use eye protection according to EN 166.	Wear suitable gloves tested to EN374.
Cleaning	PROC05	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.
Waste management	PROC08b	More than 4 hours	Good general room ventilation - Outdoors	3 - 5	Wear a respirator conforming to EN140 with an assigned protection factor of at least 10.	Use eye protection according to EN 166.	Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

See chapter 8 of this Safety Data Sheet for specifications.

