

According to 1907/2006/EC, Article 31

Printing date 21.12.2023

Version number 4

Revision: 21.12.2023

ROTO CASTING RESIN - PART B

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

· 1.1 Product identifier:

- Trade name: Roto Casting Resin Part B
- Utilization of the substance of the formulation: Polyurethane resin.
- 1.2 Relevant identified uses of the substance or mixture and uses advised against: No further relevant information available.
- · Application for the substance / the preparation: Hardener for Polyol for the production of polyurethane.
- · Uses advised against: None.

• 1.3 Details of the supplier of the safety data sheet • Supplier: DWR plastics Broadway Newport Shropshire TF10 7TP Tel: +44 (0) 7576028547 Email: info@dwrplastics.com

• 1.4 Emergency telephone number: + 44 (0) 7576028547

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:
 Classification according to Regulation (EC) No 1272/2008

Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Carc. 2 H351 Suspected of causing cancer.
STOT RE 2 H373 May cause damage to the lung, the respiratory system and the respiratory tract through prolonged or repeated exposure.



Acute Tox. 4H332 Harmful if inhaled.Skin Irrit. 2H315 Causes skin irritation.Eye Irrit. 2H319 Causes serious eye irritation.Skin Sens. 1H317 May cause an allergic skin reaction.STOT SE 3H335 May cause respiratory irritation.

· 2.2 Label elements:

• *Labelling according to Regulation (EC) No 1272/2008* The product is classified and labelled according to the CLP regulation.



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(Contd. on page 2) · Hazard pictograms: GHS07 GHS08 · Signal word: Danger. · Hazard-determining components of labelling: 4,4'-diphenyl-methane diisocyanate. oligomeric 4-Toluenesulfonyl Isocyanate · Hazard statements: EUH204 Contains isocyanates. May produce an allergic reaction. Adequate training is required before industrial or professional use. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H332 Harmful if inhaled. H334 May cause allergic or asthma symptoms or breathing difficulties if inhaled. H335 May cause respiratory irritation. H351 Suspecting of causing cancer. H373 May cause damage to the lung, the respiratory system and the respiratory tract through prolonged or repeated exposure. · Precautionary statements: Do not breathe dust/fumes/gas/mist/vapours/spray. P260 P280 Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P405 Store locked up. P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

• 2.3 Other hazards:

Persons with hypersensitivity of the airways (eg asthma, chronic bronchitis) may, with not handle the product. Symptoms in the respiratory tract can also still some hours occur after overexposure. Dust, vapors and aerosols are the primary threat to the respiratory tract. The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

· Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· vPvB: Not applicable.



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SECTION 3: Composition/information on ingredients

• 3.2 Chemical characterization: Mixture

• Description: Mixture of substances listed below with non-hazardous additions.

· Dangerous components:		
CAS: 1892595-22-0 Reg.nr.: 01-2119457013-49- xxxx 01-2119457013-49- xxxx	4,4'-diphenyl-methane diisocyanate. Oligomeric	25-50%
CAS: 25686-28-6 NLP: 500-040-3 Reg.nr.: 01-2119457013-49- xxxx	4,4'-diphenyl-methane diisocyanate. Oligomeric	25-50%
CAS: 4083-64-1 EINECS: 223-810-8	4-Toluenesulfonyl Isocyanate Consisting of: 98-59-9 tosyl chloride (>0.57-<1.14%)	≥ 0.25-1%

• Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First Aid Measures

• 4.1 Description of first aid measures

• General information: Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident. Immediately remove any clothing soiled by the product.

• *After inhalation:* Supply fresh air; consult doctor in case of complaints. In case of unconsciousness place patient stably in side position for transportation.

After skin contact: İmmediately wash with water and soap and rinse thoroughly. If skin irritation continues, consult a doctor.

• After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

• After swallowing: Do not induce vomiting; call for medical help immediately.

If swallowed, rinse mouth with water (only if the person is conscious).



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A person vomiting while laying on their back should be turned onto their side. If symptoms persist consult doctor.

- 4.2 Most important symptoms and effects, both acute and delayed: The product is irritating to the respiratory tract and may trigger skin and respiratory sensitization. Treatment of acute irritation or bronchial is primarily symptomatic. Depending on the degree of exposure and the complaints may be necessary long-term medical care.
- **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

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SECTION 5: Firefighting measures

· 5.1 Extinguishing media

- Suitable extinguishing agents: Extinguishing powder. Do not use water.
- · Unsuitable extinguishing agents: Water.
- 5.2 Special hazards arising from the substance or mixture

In case of fire, formation of carbon monoxide, nitrogen oxide, isocyanate vapour, and traces of vapour, and traces of hydrogen cyanide is possible. Fireman have to wear self-contained breathing apparatus. Do not let enter contaminated extinguishing water into the soil, groundwater or surface waters.

• 5.3 Advice for firefighters

- Protective equipment: Wear self-contained respiratory protective device. Wear fully protective impervious suit.
- *Additional information: Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.*

Cool endangered receptacles with water spray

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures: Protective equipment (see section 8). Provide sufficient ventilation. Wear protective equipment and emergency procedures. Wear protective equipment. Keep unprotected people away. Wear protective clothing.
- 6.2 Environmental precautions: Prevent seepage into sewage system, workpits and cellars. Do not allow to enter sewers/surface or ground water.
- 6.3 Methods and material for containment and cleaning up: Remove mechanically, with residual wet, absorbent material (eg sawdust, chemical binder based on Calcium silicate hydrate, sand). After approx 1 hour transfer to waste container and do not seal (evolution of CO2). Keep damp in a safe ventilated area for several days. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.
- 6.4 Reference to other sections See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling: At workplaces or system parts where isocyanate aerosols and/or vapours in higher



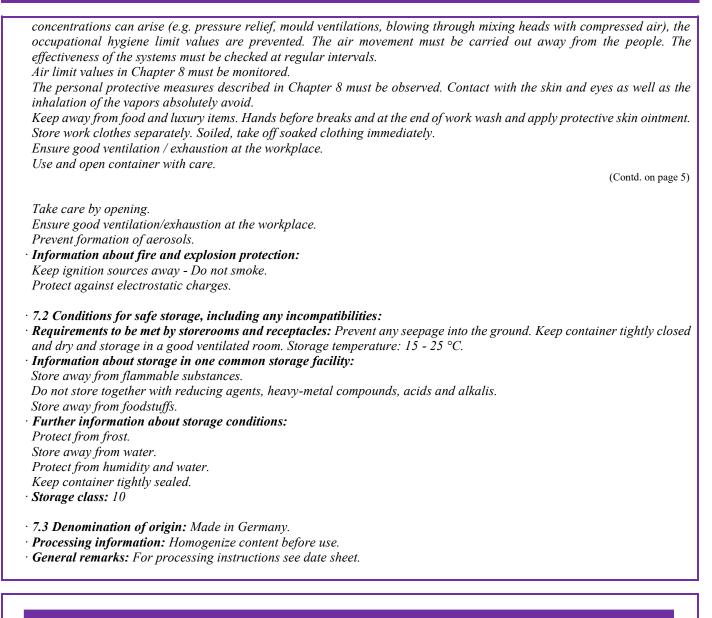
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SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters: Contains no substances with occupational exposure limit values.

• Ingredients with limit values that require monitoring at the workplace:	
1892595-22-0 4,4'-dipl	henyl-methane diisocyanate. oligomeric
MAK (Germany)	Short-term value: 0.05 mg/m ³ Long-term value: 0.05 mg/m ³
25686-28-6 4,4'-dipher	nyl-methane diisocyanate. oligomeric
MAK (Germany)	Short-term value: 0.05 mg/m ³ Long-term value: 0.05 mg/m ³
4083-64-1 4-Toluenesi	ulfonyl Isocyanate
WEL (Great Britain)	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO



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• DNELs		
25686-28-6 4,4'-	diphenyl-methane diisocyanate. oligomeric	
Inhalative	DNEL Acute - local effects DNEL Long-term - local effects	0.05 mg/m ³ (General population) 0.1 mg/m ³ (workers) 0.025 mg/m ³ (General population) 0.05 mg/m ³ (workers)
103-23-1 Di-(2-e	thylhexyl) adipate	
Oral Dermal	DNEL Chronic - systemic effects DNEL chronic - systemic effects	1.3 mg/kg bw/d (General population) 13 mg/kg bw/d (General population) 25.5 mg/kg bw/d (workers)
Inhalative	DNEL chronic - systemic effects	4.4 mg/m ³ (General population) 17.8 mg/m ³ (workers) (Contd. on page 6)

• PNECs	
25686-28-6 4,4'-0	diphenyl-methane diisocyanate. oligomeric
PNEC STP	1 mg/L (sewage plant)
PNEC soil	1 mg/kg (soil (Boden))
PNEC	1 mg/l (freshwater)
	0.1 mg/l (marine water)
103-23-1 Di-(2-et	thylhexyl) adipate
PNEC STP	35 mg/L (sewage plant)
PNEC sediment	15.6 mg/kg (freshwater- sediment)
PNEC soil	0.865 mg/kg (soil (Boden))
PNEC	0.0032 mg/l (freshwater)
	0.0032 mg/l (marine water)
	0.0032 mg/l (intermittent releases)

Additional information: The lists valid during the making were used as basis.

- · 8.2 Exposure controls:
- Appropriate engineering controls: No further data; see item 7.
- · Individual protection measures, such as personal protective equipment.
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

- Avoid contact with the eyes and skin.
- Respiratory protection:

If the exposure levels remain below the established exposure limits no respiratory protection is required. Where exposures exceed the established exposure limits, respiratory protection to the material and the degree of exposure is recommended accordingly. A respiratory protection unit offers the same eye and face protection.

The cutting, grinding or sanding of parts after curing can result in respirable dust. Wearing appropriate for this dust respirators may be necessary.

In inadequately ventilated places and during spraying respirator

necessary. Recommended to be fresh-air mask or filter combination for short-term work A2-P2.



In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Not necessary if room is well-ventilated.

• Hand protection:



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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation . Material of gloves:

• Material of gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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• *Penetration time of glove material: Suitable materials for protective gloves, EN 374-3:*

Polychloroprene - CR: thickness> = 0.5 mm, breakthrough time> = 480 min. NBR - NBR: thickness> = 0.35 mm, Breakthrough time> = 480 min. Butyl rubber - IIR: thickness> = 0.5 mm, breakthrough time> = 480 min. Fluorine rubber - FKM: thickness> = 0.4 mm; breakthrough time> = 480 min. Recommendation: Dispose of contaminated gloves .. The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed. • **Eye/face protection:** Face protection

Tightly sealed goggles

· Eye/face protection: Protective work clothing.

SECTION 9: Physical and chemical properties

• 9.1 Information on basic physical and chemical properties:

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· Colour:		
· Odour:	Yellow	
• Odour threshold:	Characteristic	
• Melting point/freezing point:	Not determined.	
Boiling point or initial boiling point and	41 °C	
boiling range	$\sim 200.0C(4) \approx 10121D$	
· Flammability	>300 °C (bei 1013 hPa)	
· Lower and upper explosion limit	Not applicable.	
· Lower:		
· Upper:	Not determined.	
· Flash point:	Not determined.	
· Ignition temperature:	250 °C	
· Decomposition temperature:	400 °C	
· pH	Not determined.	
· Viscosity:	Not determined.	
· Kinematic viscosity		
· Dynamic at 20 °C:	Not determined.	
• Solubility	80 mPas	
• water:	T 1.11	
• Partition coefficient n-octanol/water (log value)	Insoluble.	
• Vapour pressure at 25 °C:	Not determined.	
• Density and/or relative density	0.0002 hPa	
• Density at 20 °C:	1 1 2 0 7 5 / 3	
· Relative density:	1.13875 g/cm ³	
• Vapour density:	Not determined.	
1 V	Not determined.	

• 9.2 Other information:

Appearance:	
· Form:	Fluid
• Important information on protection of health	
and environment, and on safety.	
• Auto-ignition temperature:	Product is not self-igniting.
• Explosive properties:	Product does not present an explosion hazard.
· Solvent content:	
Organic solvents	0.0 g/l
\cdot VOC (EC)	
· Change in condition	Not determined
• Evaporation rate:	
• Information with regard to physical hazard class	
• Explosives:	Void
· Flammable gases:	Void
• Aerosols:	Void
• Oxidising gases:	Void
• Gases under pressure:	Void
• Flammable liquids:	Void
• Flammable solids:	Void
• Self-reactive substances and mixtures:	Void
• Pyrophoric liquids:	Void
• Pyrophoric solids:	Void

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Self-heating substances and mixtures:	Void	
Substances and mixtures, which emit		
flammable gases in contact with water:	Void	
Oxidising liquids:	Void	
Oxidising solids:	Void	
· Organic peroxides:	Void	
· Corrosive to metals:	Void	
Desensitised explosives:	Void	
L		

SECTION 10: Stability and reactivity

10.1 Reactivity: Not classifies as a reactivity hazard.

10.2 Chemical stability:

Thermal decomposition / conditions to be avoided: > 200 °C polymerisation, CO 2 separation.

10.3 Possibility of hazardous reactions: Exothermic reaction with amines and alcohols; reacts with water forming C02, in closed containers risk of bursting owing to increase of pressure.

10.4 Conditions to avoid: Moisture. Heat, open flames and other ignition sources. With contaminated pipes and tanks or corroded or rusty containers may lead to increased formation of hydrogen. Detail in section 7.

10.5 Incompatible materials: Water, alcohol, amine, base and acid.

10.6 Hazardous decomposition products: At the air > 300 °C: acrolein.

SECTION 11: Toxicological information

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

• Acute toxicity: Harmful if inhaled.

LD/LC50 values relevant for classification:		
25686-28-6 4,4'-diphenyl-methane diisocyanate. oligomeric		
Oral	LD50	>5,000 mg/kg (rat) (OECD 425Acute Oral Toxicity: Up-and-Down Procedure)
103-23-1 Di-(2-ethylhexyl) adipate		
Oral	LD50	>20,000 mg/kg (rat) (OECD 401 Acute Oral Toxicity)

• Skin corrosion/irritation: Causes skin irritation.

• Serious eye damage/irritation: Causes serious eye irritation.

· Respiratory or skin sensitisation:

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

· Carcinogenicity: Suspected of causing cancer.

• **STOT-single exposure:** May cause respiratory irritation.

• **STOT-repeated exposure:** May cause damage to the lung, the respiratory system and the respiratory tract through prolonged or repeated exposure.

• 11.2 Information on other hazards:

May cause an allergic skin reaction.



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Endocrine disrupting properties None of the ingredients is listed

SECTION 12: Ecological information

· 12.1 Toxicity:

Aquatic toxicity:

9016-87-9 Diphenylmethanediisocyanate, isomeres and homologues LC50 (96 h) >0.78 mg/l (Oncorhynchus mykiss)

EC50 (48 h) >500 mg/l (Daphnia Magna) (OECD 202 Daphnia sp. Acute Immobilisation Test) EC50 (72 h) >500 mg/l (Desmodesmus subspicatus)

· 12.2 Persistence and degradability: No further relevant information available

• Other information: Elimination by adsorption onto activated sludge.

• 12.3 Bio accumulative potential: No further relevant information available.

• 12.4 Mobility in soil: No further relevant information available.

· 12.5 Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· vPvB: Not applicable.

• 12.6 Endocrine disrupting properties: The product does not contain substances with endocrine disrupting properties.

· 12.7 Other adverse effects:

· General notes: Water hazard class 1 (German Regulation)(Self-assessment): Slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

• **Recommendation:** Dispose of in accordance to local to the regulations pertaining to the disposal of waste.

• Uncleaned packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

• 14.1 UN-Number

· ADR, ADN, IMDG, IATA

Void

Void

• 14.2 UN proper shipping name

· ADR, ADN, IMDG, IATA



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• 14.3 Transport hazard class(es)	
· ADR, ADN, IMDG, IATA · Class	Void
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
• 14.6 Special precautions for user	Not dangerous cargo. Avoid temperatures below 0 ° C. Heat above +50° C. Protect from moisture. Keep away from food, stimulants, acids and alkalis
• 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· UN "Model Regulation":	Void

SECTION 15: Regulatory information

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

• *Labelling according to Regulation (EC) No 1272/2008 The product is classified and labelled according to the CLP regulation.*

· Hazard pictograms:



GHS07 GHS08

· Signal word: Danger.

· Hazard-determining components of labelling:

Diphenylmethanediisocyanate, isomeres and homologues Diphenylmethane-4,4'-di-isocyanante

· Hazard statements:

EUH204 Contains isocyanates. May produce an allergic reaction. Adequate training is required before industrial or professional use.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation. H332 Harmful if inhaled.

H334 May cause allergic or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H351 Suspecting of causing cancer.

H373 May cause damage to the lung, the respiratory system and the respiratory tract through prolonged or repeated exposure.

• Precautionary statements:

P260 Do not breathe dust/fumes/gas/mist/vapours/spray.

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P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+	+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· Directive 2012/18/EU

• Named dangerous substances – ANNEX 1: None of the ingredients is listed.

· National regulations:

• Technical instructions (air):



• Water hazard class: Water hazard class 1 (VwVwS 17.05.99): Slightly hazardous for water.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• Relevant phrases

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

H373 May cause damage to organs through prolonged or repeated exposure.

EUH204 Contains isocyanates. May produce an allergic reaction. • Recommended restriction of use

The information in this safety data sheet corresponds to the best of our knowledge at the time of the revision. The information should give you clues for the safe handling of the product mentioned in this safety data sheet during storage, processing, transport and disposal. The details are not transferable to other products. Insofar as the product mentioned in this safety data sheet is mixed with other materials, mixed or processed, or subjected to processing, the information in this safety data sheet, unless expressly stated otherwise, can not be transferred to the new material produced in this way.

UFI code is valid in: Germany Slovenia Austria Netherlands Czech Republic Poland Lithuania

· Department issuing SDS: Environment protection department

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• Abbreviations and acronyms: RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) ICAO: International Civil Aviation Organisation ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association GHS: Globally Harmonised System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) VOC: Volatile Organic Compounds (USA, EU) DNEL: Derived No-Effect Level (UK REACH) PNEC: Predicted No-Effect Concentration (UK REACH) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative Acute Tox. 4: Acute toxicity – Category 4 Skin Irrit. 2: Skin corrosion/irritation – Category 2 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2 Resp. Sens. 1: Respiratory sensitisation – Category 1 Skin Sens. 1: Skin sensitisation – Category 1 Carc. 2: Carcinogenicity – Category 2 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3 STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2