

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 28.05.2024

Version number 4

Revision: 28.05.2024

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

1.1 Product identifier

- Trade name: 3,3',5,5'-Tetramethylbenzidine
- Synonyma TMB



- Article number: 35926

- CAS Number:
54827-17-7

- EC number:
259-364-6

- 1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.

- Application of the substance / the mixture: Laboratory chemicals

1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier:
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de

- Information department: Product Safety Department Tel.: +49 6221 13840-35

1.4 Emergency telephone number:

Emergency medical information in case of poisoning
Poison Information Centre Mainz-Tel: +49 (0) 6131 19240
(Counselling in German and English)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

- Classification according to Regulation (EC) No 1272/2008:



GHS08

Muta. 2 H341 Suspected of causing genetic defects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

2.2 Label elements

- Labelling according to Regulation (EC) No 1272/2008:

The substance is classified and labelled according to the GB CLP regulation.

- Hazard pictograms: GHS07, GHS08

- Signal word: Warning

- Hazard statements:

H302 Harmful if swallowed.

H341 Suspected of causing genetic defects.

- Precautionary statements

P201 Obtain special instructions before use.

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P330 Rinse mouth.

(Contd. on page 2)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

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Trade name: 3,3',5,5'-Tetramethylbenzidine

(Contd. of page 1)

- P405 Store locked up.
- **Labelling of packages where the contents do not exceed 125 ml**
 - **Hazard pictograms** GHS07, GHS08
 - **Signal word** Warning
 - **Hazard statements**
H341 Suspected of causing genetic defects.
 - **Precautionary statements**
P201 Obtain special instructions before use.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
 - **2.3 Other hazards**
 - **Results of PBT and vPvB assessment:**
 - **PBT:** PBT - Assessment not available.
 - **vPvB:** vPvB - Assessment not available.
 - **Determination of endocrine-disrupting properties** No further relevant information available.

SECTION 3: Composition/information on ingredients

- **3.1 Substances**
- **CAS No. Description:**
54827-17-7 3,3',5,5'-tetramethylbenzidine
- **Identification number(s):**
- **EC number:** 259-364-6
- **Description:**
- **Empirical formula:** $C_{16}H_{20}N_2$
- **MW:** 240.4

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Wash off immediately with soap and water and rinse thoroughly. In case of complaints, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes with running water. Remove contact lenses if possible and continue rinsing. Consult an ophthalmologist immediately.
- **After swallowing:**
Rinse out mouth and consult a doctor.
Do not induce vomiting!
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
 CO_2 , extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture:**
Formation of hazardous vapours and gases possible during heating or in case of fire.
In case of fire, the following can be formed, but not limited to:
Nitrogen oxides (NOx)
Carbon monoxide and carbon dioxide

(Contd. on page 3)

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Version number 4

Revision: 28.05.2024

Trade name: 3,3',5,5'-Tetramethylbenzidine

(Contd. of page 2)

- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained breathing apparatus.
- **Additional information**
Collect contaminated extinguishing agent separately, must not enter the sewage system.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
Avoid formation of dust.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up**
Dispose contaminated material as waste according to section 13.
Pick up mechanically.
- **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:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Store containers tightly closed and dry.
Store under lock and key and with access restricted to technical experts or their assistants only.
- **7.3 Specific end use(s):** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls:** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Store protective clothing separately.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- **Breathing equipment:**
Short term filter device:
Filter P2.
- **Hand protection:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Protective gloves.

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

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Version number 4

Revision: 28.05.2024

Trade name: 3,3',5,5'-Tetramethylbenzidine

(Contd. of page 3)

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:**

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.

· **Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

Natural rubber, NR

Nitrile rubber, NBR

· **Eye/face protection:** Safety glasses

· **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information:**

· **Physical state:**

Solid.

· **Colour:**

light ivory-colored

· **Odour:**

Odourless

· **Odour threshold:**

Not determined.

· **Melting point/freezing point:**

168-170 °C

· **Boiling point or initial boiling point and boiling range:**

No information available

· **Flammability:**

No information available

· **Lower and upper explosion limit:**

· **Lower:**

No information available

· **Upper:**

No information available

· **Flash point:**

No information available

· **Decomposition temperature:**

No information available

· **pH:**

No information available

· **Viscosity:**

· **Kinematic viscosity:**

No information available

· **Dynamic viscosity:**

No information available

· **Solubility:**

· **Water:**

Insoluble

· **Partition coefficient n-octanol/water (log value):**

No information available

· **Vapour pressure:**

No information available

· **Density and/or relative density:**

· **Density:**

No information available

· **Relative density:**

No information available

· **Particle characteristics**

No information available

· **9.2 Other information**

· **Appearance:**

· **Form:**

Powder

· **Important information on protection of health and environment, and on safety:**

· **Explosive properties:**

The product is not explosive, but the formation of explosive dust/air mixtures is possible.

(Contd. on page 5)

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Revision: 28.05.2024

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(Contd. of page 4)

· Molecular weight 240.4 g/mol

SECTION 10: Stability and reactivity

- **10.1 Reactivity:** No further relevant information available.
- **10.2 Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions:** No further relevant information available.
- **10.4 Conditions to avoid:** High temperatures
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** In case of fire: see section 5

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:**
- **Acute toxicity:** Harmful if swallowed.
- **Skin corrosion/irritation:** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation:** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity:** Suspected of causing genetic defects.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards:**
- **Endocrine disrupting properties:** No relevant information available

SECTION 12: Ecological information

- **12.1 Toxicity:**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability:** No further relevant information available.
- **12.3 Bioaccumulative 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:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.
- **12.6 Endocrine disrupting properties:** For information on endocrine disrupting properties see section 11.
- **12.7 Other adverse effects:**
- **Additional ecological information:**
- **General notes:**
- Do not allow product to reach ground water, water course or sewage system.
- Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
- Dispose of in accordance with official regulations.
- Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 6)

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(Contd. of page 5)

- **Uncleaned packagings:**

- **Recommendation:**

Uncleaned packaging must be disposed of in the same way as the product in accordance with official regulations.

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SECTION 14: Transport information

- **14.1 UN number or ID number**

- **ADR, IMDG, IATA**

Void

- **14.2 UN proper shipping name**

- **ADR, IMDG, IATA**

Void

- **14.3 Transport hazard class(es)**

- **ADR, 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 applicable.

- **14.7 Maritime transport in bulk according to IMO instruments**

Not applicable.

- **Transport/Additional information:**

Not dangerous according to the above specifications.

- **UN "Model Regulation":**

Void

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SECTION 15: Regulatory information

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

- **Poisons Act**

- **Regulated explosives precursors** Substance is not listed.

- **Regulated poisons** Substance is not listed.

- **Reportable explosives precursors** Substance is not listed.

- **Reportable poisons** Substance is not listed.

- **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** Substance is not listed.

- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 9d

- **Regulation (EU) No 649/2012**

Annex I Part 1

Annex I Part 2

- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

Substance is not listed.

- **REGULATION (EU) 2019/1148**

- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS** (Upper limit value for the purpose of licensing under Article 5(3))

Substance is not listed.

- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS** Substance is not listed.

- **Regulation (EC) No 273/2004 on drug precursors** Substance is not listed.

(Contd. on page 7)

GB

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Version number 4

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(Contd. of page 6)

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**
Substance is not listed.

· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
I	80-100

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

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

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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.

· **Department issuing SDS:** Product Safety Department

· **Contact:** +49 6221 13840-35

· **Date of previous version:** 18.11.2019

· **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

PBT: persistent, bioaccumulative, toxic substance (UK REACH)

vPvB: very persistent, very bioaccumulative substance (UK REACH)

UK REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

GB CLP: Regulation on classification, labelling and packaging of substances and mixtures

bw: body weight

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

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

Muta. 2: Germ cell mutagenicity – Category 2

GB