

Material Safety Data Sheet
TMB / Substrate Solution,
precipitatingDate: August 2007
Mik_TMB_Blot_Line_engl_072008.doc

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1. Identification of the preparation and of the company

Product name: SeramunBlau® Prec
Catalog number: S-002-# TMB**Use of the preparation:**

This product is a substrate solution for use in immunological invitro tests, based on the marker enzyme HRP for the colorimetric detection on membranes, electrophoretic gels or other surfaces.

Company: Seramun Diagnostica GmbH
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D-15754 Heidesee OT Wolzig
Germany
Tel. order: +49 (0)33767/791-10**responsible for this MSDS::** +49 (0)33767/791-41 (Hr. Dr. Rassmann)
Emergency telephone: +49 (0)33767/791-13 (available only during office hours)**Supplier:** MIKROGEN GmbH
Floriansbogen 2 – 4
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Germany
responsible: +49(0)89 54801-120

2. Hazards Identification

Although it is not classified as hazardous according to the European Regulation 1999/45/EC the product should be handled with the usual care for all chemicals, in order to avoid synergistic effects. Because of the preservative it may be dangerous for water organisms.

3. Composition / Information on Ingredients

Chemical characterization of product composition:

Aqueous solution of TMB, hydrogen peroxide, Tween 20 as detergent, Citrate, EDTA, Kathon CG as preservative.

Dangerous components

CAS-Nr.	Name	percentage	Symbol	R-phrases
54827-17-7	3,3', 5,5' Tetramethylbenzidine	< 0.04	X _n	20/21/22-36/37/38-40
6381-92-6	Ethylene diamine tetraacetate-disodium salt	< 0.1	-	
26172-55-4	5-Chlor-2-methyl-4-isothiazolin-3-one	< 0.0001	T, N	23/24/25-34-43-50/53
2682-20-4	2-Methyl-4-isothiazolin-3-one	< 0.00005	T, N	23/24/25-34-43-50/53
7722-84-1	hydrogen peroxid	< 0.005	C, O	34-8

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The full text of the R-phrases is in article 16.

4. First-Aid Measures

- After contact with skin carefully wash with water.
- After contact with the eyes carefully rinse the opened eye with running water for several minute, contact a doctor.
- After swallowing, rinse mouth and drink water, consult a doctor.
- Contaminated clothing should be washed prior to next use

5. Fire-Fighting Measures

- The product is not inflammable, extinguishing measures should therefore be prepared for an environmental fire.
- In case of fire toxic vapours can be released.
- Wear breath protective mask and protective clothes if necessary during fire fighting.

6. Accidental Release Measures

- Avoid contact with skin and eyes.
- Dilute with plenty of water.
- Ventilate and clean affected area very carefully after having completely disposed off the material

7. Handling and Storage

- Handling:**
Special measures are not required.
- Storage:**
At 2 – 8° C in closed HDPE or PP bottles. Protect from light

8. Exposure Controls / Personal Protection

Exposure Limit Values:

EINECS	name	limit value according MAK (TRGS 900)
259-364-6	3.3', 5.5' Tetramethylbenzidine	not listed
205-358-3	Ethylene diamine tetraacetate disodium salt	not listed
247-500-7	5-Chlor-2-methyl-4-isothiazolin-3-one	0.05 mg/m ³
220-239-6	2-Methyl-4-isothiazolin-3-one	0.05 mg/m ³
231-765-0	hydrogen peroxide	1.4 mg/m ³

By using the product according with the requirements, no air pollution is to be expected.

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Exposure controls:	Respiratory protection:	Not required
	Hand protection:	protective gloves of nitrilrubber or nature latex
	Eye protection:	protective glasses

9. Physical and Chemical Properties

General Data:

liquid product, slight foaming when shaken
 Colour: colourless to slightly yellow
 Smell: characteristic

Important data:

pH-value : 4.9 - 5.1
 boiling point: 102 °C
 Flash point: not applicable
 Explosive properties: non
 Oxidising properties: non
 Vapour pressure: not measured
 Relative density: 1.013 g/ml
 Solubility: complete soluble / miscible in protic solvents
 Water solubility: complete soluble / miscible
 Viscosity: not measured

Other Information:

no further dangerous properties known

10. Stability and Reactivity

Conditions to avoid: strong heat, light, especially sunlight. Will not cause dangerous reactions, but destroys the quality as substrate solution

Materials to avoid: heavy metal salts, peroxidases and catalases. Will not cause dangerous reactions, but destroys the quality as substrate solution

Hazardous decomposition products: The final decomposition product is the yellow Diammoniumion of Tetramethylbenzidin, a slightly watersoluble biodegradable substance not classified as hazardous.

Note: contains preservatives as stated under issue number 3

11. Toxilogical Information

<u>Component</u>	<u>valuation</u>	<u>value</u>	<u>species</u>
3,3',5,5'-tetramethylbenzidine	no information		
Ethylene diamine tetraacetate disodium salt	LD ₅₀ (oral)	2000 mg/kg	rat
5-Chlor-2-methyl-4-isothiazolin-3-one	LD ₅₀ (oral)	3350 mg/kg	rat
2- Methyl-4-isothiazolin-3-one	LD ₅₀ (oral)	550 mg/kg	rat
Hydrogen peroxide	LD ₅₀ (oral)	1232 mg/kg	rat
	LD ₅₀ (dermal)	3000 mg/kg	rabbit

Further toxicological information:
 Quantitative data concerning toxicity of the product do not exist

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12. Ecological Information

only relevant for the preservatives 5-Chlor-2-methyl-4-isothiazolin-3-one and 2-Methyl-4-isothiazolin-3-one.

Ecotoxicity

<u>species</u>	<u>valuation</u>	<u>value</u>
trout	LC ₅₀ (mg/l)	0.19
bass	LC ₅₀ (mg/l)	0.28
marine algae (Skeletonema costatum)	EC ₅₀ (mg/l)	0.003
algae (Selenastrum capricornutum)	EC ₅₀ (mg/l)	0.018
invertebrates (Daphnia magna)	EC ₅₀ (mg/l)	0.16

Mobility

no data available

Persistence and degradability

<u>substance</u>	<u>t_{1/2} anerob (h)</u>
5-Chlor-2-methyl-4-isothiazolin-3-one	4.8
2-Methyl-4-isothiazolin-3-one	9.1

Bioaccumulative Potential

not investigated

Results of PBT Assessment

not investigated

Other Adverse Effects

No further effects known. If used properly, no ecological problems are to be expected.

13. Disposal Considerations

Product

May not be discarded together with the normal waste. Chemicals are remaining residues have to be treated as special waste and should be discarded according to the appropriate legislation. Information can be collected from the responsible public authorities.

Packaging

Disposal according to the instructions of the public authorities. Contaminated packages have to be treated like the substance itself. Packaging, that is not contaminated, can be recycled or treated like normal house garbage.

14. Transport information

The product is not subject to official transport regulations.

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15. Regulatory Information

Characterization according to the guidelines of the European Community:

Symbol: not applicable

Designation: not applicable

Water endangering class 1 (self-classification): low potential of water endangering.

16. Additional Comments**Fully Text To The R-Phrases Mentioned in Heading 3:**

R8 Contact with combustible material may cause fire.

R20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R34 Causes burns

R36/37/38 Irritating to eyes, respiratory system and skin.

R40 Possible risk of cancer.

R43 May cause sensitization by skin contact.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

The information stated above is based on our actual knowledge and is intended to describe our products concerning safety recommendations. The information does not assure product properties and is therefore no basis for legal action.

The REACH registration numbers are available after the REACH-agency started to work in June 2008 at the earliest till latest registration date June 2018.