

TMB Substrate Solution

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 PRODUCT IDENTIFIER

Product name: TMB Substrate Solution for all products listed in the annex

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

This Product is a colorimetric substrate solution for use in immunological in-vitro tests, based on the marker enzyme HRP.

Use in private households is not allowed.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

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1.4 EMERGENCY TELEPHONE NUMBER

Phone: +49 (0)6074-4876-0 available only during office hours

2. HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Although it is not classified as hazardous according to the European Regulation (EC) 1272/2008 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.

2.2 LABEL ELEMENTS

Pictogram	none
Signal word	none
Hazard Statement(s)	none
Precautionary Statement(s)	none
Supplemental Hazard Statements	none

Safety data sheet available for professional users on request.

2.3 OTHER HAZARDS

None

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 SUBSTANCES: not applicable

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3.2 MIXTURES

Dangerous components:

REACH Register- number	EINECS	CAS-No.	name	percentage	symbol	R-phrases/ H-statements
not available	259-364-6	54827-17-7	3,3',5,5'-Tetramethylbenzidine	< 0.04	X _n 	20/21/22-36/37/38-40 H301, H311, H330, H341
not available	247-500-7	26172-55-4	5-Chlor-2-methyl-4-isothiazolin-3-one	< 0.0001	T,N 	23/24/25-34-43-50/53 H272, H314, H317, H334
not available	220-239-6	2682-20-4	2-Methyl-4-isothiazolin-3-one	< 0.0001	T,N 	23/24/25-34-43-50/53 H272, H314, H317, H334
not available	231-765-0	7722-84-1	hydrogen peroxide	< 0.01	X _n , X _i 	22-41 H302, H318

The full text of R-phrases and H-statements is in article 16

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move the concerned person to fresh air. In case of apnoea, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with plenty of water. Consult a physician.

In case of eye contact

Rinse the opened eye for several minutes with running water, if necessary remove contact lenses. Consult an ophthalmologist.

If swallowed

Never give anything by mouth to an unconscious person.

Rinse mouth with water, drink sufficient amount of water, consult a physician.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

No data available

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

No data available

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5. FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

Suitable extinguishing media:

Use water spray, alcohol resistant foam, solid extinguishing agent or carbon dioxide.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

The product itself is not inflammable; extinguishing measures should therefore be prepared for an environmental fire. In case of fire toxic vapours, e.g. nitric oxide, can be released.

5.3 ADVICE FOR FIRE-FIGHTERS

Wear breath protective mask and protective clothes if necessary during fire fighting.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Use personal protective equipment. Avoid breathing vapour/mist/gas. Care for appropriate ventilation.

6.2 ENVIRONMENTAL PRECAUTIONS

Keep away from drains.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Suck up with inert absorbance material and dispose as hazardous waste. Keep in a suitable, closed container.

6.4 REFERENCE TO OTHER SECTIONS

For disposal considerations see chapter 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

No specific procedures necessary.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store tightly closed on a cool dry place. Reseal opened bottles carefully and store in an upright position.

Recommended storage temperature: 2-8°C

7.3 SPECIFIC END USE(S)

Use only in accordance to the manual.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

EINECS	name	limit value according MAK (TRGS 900)
259-364-6	3,3',5,5'-Tetramethylbenzidine	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 to the requirements, no air pollution is to be expected.

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8.2 EXPOSURE CONTROLS

Consider the usual good hygiene and safety practice by handling chemicals.

Personal protective equipment

Eye/face protection: Safety glasses with side shields conforming to EN 166 (EU), NIOSH (US)

Skin protection: protective gloves of nitrile rubber or nature latex, satisfying the standard EN 374

Body protection: impenetrable protective clothing, the kind of protective equipment has to be selected depending from concentration and amount of dangerous substance at the specific workplace.

Respiratory protection: not required if used according to the intended use. In case of a divergent risk assessment use a full-face respirator with multi-purpose combination respirator cartridge Type ABEK (EN 14387).

Environmental exposure controls

Keep away from drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Description	liquid product, slight foaming when shaken
Colour	colourless to slightly bluish
Odour	characteristic
pH-value	3.6 – 3.8
Boiling point	100 °C
Flash point	not applicable
Explosive properties	non
Oxidizing properties	non
Vapour pressure	not measured
Relative density	1.003 g/ml
Solubility	complete soluble/miscible in protic solvents
Water solubility	complete soluble/miscible
Viscosity	not measured

9.2 OTHER INFORMATION

No further dangerous properties known.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

No data available.

10.2 CHEMICAL STABILITY

No data available.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No data available.

10.4 CONDITIONS TO AVOID

Light, heat, moisture (will not cause a dangerous reaction, but destroys the quality of the product)

10.5 INCOMPATIBLE MATERIALS

Oxidizing agents, metals and the salts of them (will not cause a dangerous reaction, but destroys the quality of the product)

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10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Dangerous decomposition products are not known.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Component	valuation	value	species
3,3',5,5'-tetramethylbenzidine	no information		
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:

Calculation of Acute Toxicity (ATE) according EC 1272/2008, Appendix I: see section 15.1

12. ECOLOGICAL INFORMATION

This information is only relevant for the preservatives contained (5-chlor-2-methyl-4-isothiazoline-3-on and 2-methyl-4-isothiazoline-3-on)

12.1 TOXICITY

species	valuation	value
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

12.2 PERSISTENCE AND DEGRADABILITY

substance	t ½ anerob (h)
5-chlor-2-methyl-4-isothiazolin-3-one	4.8
2-methyl-4-isothiazolin-3-one	9.1

12.3 BIOACCUMULATIVE POTENTIAL

No data available.

12.4 MOBILITY IN SOIL

No data available.

12.5 RESULTS OF PBT AND VPVB ASSESSMENT

Not investigated, because no component is known to be persistent, bioaccumulative or toxic and is marked with R 48 by the producer.

12.6 OTHER ADVERSE EFFECTS

No further effects known.

If used properly, no ecological problems are to be expected

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13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Product:

May not be discarded together with the normal waste.

Chemicals or 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

14.1 UN NUMBER

ADR/RID: -

IMDG: -

IATA: -

14.2 UN PROPER SHIPPING NAME

ADR/RID: No dangerous goods

IMDG: No dangerous goods

IATA: No dangerous goods

14.3 TRANSPORT HAZARD CLASS(ES)

ADR/RID: -

IMDG: -

IATA: -

14.4 PACKING GROUP

ADR/RID: -

IMDG: -

IATA: -

14.5 ENVIRONMENTAL HAZARDS

ADR/RID: No

IMDG: Marine pollutant no

IATA: No

14.6 SPECIAL PRECAUTIONS FOR USER

No data available.

14.7 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not applicable.

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

This safety data sheet meets the requirements of the Regulation (EC) 453/2010 to amending Regulation (EC) 1907/2006.

The calculated toxicity (ATE) of the mixture according EC 1272/2008, Annex I: 69,200 mg/kg body weight, no classification as toxic

According EC 1272/2008, Annex I no classification as hazardous to water.

15.2 CHEMICAL SAFETY ASSESSMENT

No data available.

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16. OTHER INFORMATION

Full text of R-Phrases mentioned in heading 3:

R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.
R22	Harmful 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.
R41	Risk of serious damage to eyes.
R43	May cause sensitization by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of H-Sentences mentioned in heading 3:

H272	May intensify fire; oxidiser.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.

Categories of the Acute Toxicity (ATE) according EC 1272/2008:

Category 1	0 < ATE ≤ 5	(oral in mg/kg body weight)
Category 2	5 < ATE ≤ 50	(oral in mg/kg body weight)
Category 3	50 < ATE ≤ 300	(oral in mg/kg body weight)
Category 4	300 < ATE ≤ 2.000	(oral in mg/kg body weight)

Further information:

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 in heading 3 is available only after a registration by the REACH Agency. Or it is not available as the substances or its use is exempted from registration according to article 2 REACH Regulation EC 1907/2006, or the annual tonnage does not require a registration is envisaged for a later registration deadline.

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History: update of annex

Date of issue: 20.02.2014
Version: 02

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Annex

Product code	Product name
ADVA0010	Adenovirus IgA
ADVG0010	Adenovirus IgG
ADVM0010	Adenovirus IgM
ASCG0020	Ascaris lumbricoides IgG
BOPA0030	Bordetella pertussis IgA
BOPG0030	Bordetella pertussis IgG
BOPM0030	Bordetella pertussis IgM
BPTA0610	Bordetella pertussis toxin (PT) IgA
BPTG0610	Bordetella pertussis toxin (PT) IgG
BORG0040	Borrelia burgdorferi IgG
BORM0040	Borrelia burgdorferi IgM
BORG0320	Lyme Borrelia IgG
BRUG0050	Brucella IgG
BRUM0050	Brucella IgM
CANA0060	Candida albicans IgA
CANG0060	Candida albicans IgG
CANM0060	Candida albicans IgM
CCVG0630	Crimean-Congo Hemorrhagic Fever Virus (CCHVF) IgG
CCVM0630	Crimean-Congo Hemorrhagic Fever Virus (CCHVF) IgM
CHAG0560	Chagas (Trypanosoma cruzi) IgG
TRYP0570	Chagas
CHIG0590	Chikungunya Virus IgG capture
CHIM0590	Chikungunya Virus IgM μ -capture
CHLA0070	Chlamydia trachomatis IgA
CHLG0070	Chlamydia trachomatis IgG
CHLM0070	Chlamydia trachomatis IgM
CHLA0510	Chlamydia pneumoniae IgA
CHLG0510	Chlamydia pneumoniae IgG
CHLM0510	Chlamydia pneumoniae IgM
CORG0090	Corynebacterium diphtheriae toxin IgG
CORG5009	Corynebacterium diphtheriae toxin 5S IgG
PCORG009	Corynebacterium diphtheriae toxin 5S IgG plus
COX1G0600	Coxiella burnetii (Q-Fever) Phase 1 IgG
COX2G0600	Coxiella burnetii (Q-Fever) Phase 2 IgG
COX2M0600	Coxiella burnetii (Q-Fever) Phase 2 IgM
CMVG0110	Cytomegalovirus (CMV) IgG
CMVM0110	Cytomegalovirus (CMV) IgM
DENG0120	Dengue Virus IgG
DENM0120	Dengue Virus IgM
DVM0640	Dengue Virus IgM μ -capture
ECHG0130	Echinococcus IgG
ENTG0140	Entamoeba histolytica IgG
EBVG0150	Epstein-Barr Virus (VCA) IgG
EBVM0150	Epstein-Barr Virus (VCA) IgM
EBVG0580	Epstein-Barr Virus (EBNA) IgG
HELA0220	Helicobacter pylori IgA
HELG0220	Helicobacter pylori IgG
PHELA022	Helicobacter pylori IgA plus
PHELG022	Helicobacter pylori IgG plus
HSV0250	Herpes simplex Virus 1+2 (HSV) IgG
HSVM0250	Herpes simplex Virus 1+2 (HSV) IgM

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Product code	Product name
HSV1G0500	Herpes simplex Virus 1 (HSV 1) IgG
HSV1M0500	Herpes simplex Virus 1 (HSV 1) IgM
HSV2G0540	Herpes simplex Virus 2 (HSV 2) IgG
HSV2M0540	Herpes simplex Virus 2 (HSV 2) IgM
INFA0290	Influenza Virus A IgA
INFG0290	Influenza Virus A IgG
INFM0290	Influenza Virus A IgM
INFA0300	Influenza Virus B IgA
INFG0300	Influenza Virus B IgG
INFM0300	Influenza Virus B IgM
LEGG0650	Legionella IgG
LEGM0650	Legionella IgM
LEIG0310	Leishmania infantum IgG
LEPG0660	Leptospira IgG
LEPM0660	Leptospira IgM
MAL0620	Malaria
MEAG0330	Measles Virus IgG
MEAM0330	Measles Virus IgM
MUMG0340	Mumps Virus IgG
MUMM0340	Mumps Virus IgM
MYCA0350	Mycoplasma pneumoniae IgA
MYCG0350	Mycoplasma pneumoniae IgG
MYCM0350	Mycoplasma pneumoniae IgM
PAIA0360	Parainfluenza Virus 1,2,3 IgA
PAIG0360	Parainfluenza Virus 1,2,3 IgG
PARG0370	Parvovirus B19 IgG
PARM0370	Parvovirus B19 IgM
RSVA0380	Respiratory syncytial Virus IgA
RSVG0380	Respiratory syncytial Virus IgG
RSVM0380	Respiratory syncytial Virus IgM
RUBG0400	Rubella Virus IgG
RUBM0400	Rubella Virus IgM μ -capture
SCHG0410	Schistosoma mansoni IgG
TAEG0420	Taenia solium IgG
TETG0430	Clostridium tetani toxin IgG
TETG5043	Clostridium tetani toxin 5S IgG
PTETG043	Clostridium tetani toxin 5S IgG plus
TICG0440	TBE / FSME IgG
PTICG044	TBE / FSME IgG plus
TICM0440	TBE / FSME IgM
TOCG0450	Toxocara canis IgG
TOXA0460	Toxoplasma gondii IgA
TOXG0460	Toxoplasma gondii IgG
TOXM0460	Toxoplasma gondii IgM μ -capture
TREG0470	Treponema pallidum IgG
TRIG0480	Trichinella spiralis IgG
VZVA0490	Varicella-Zoster Virus (VZV) IgA
VZVG0490	Varicella-Zoster Virus (VZV) IgG
VZVM0490	Varicella-Zoster Virus (VZV) IgM

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Product code	Product name
ATG1010	Anti-TG
ATPO1020	Anti-TPO
TSH1030	TSH
RFM3010	Rheumatiod Factor IgM