Safety Data Sheet

According to Hazardous Products Regulation (SOR/2015-17)

Revision date: 30.06.2023	*Version: 6.2*	*Print date: 30.06.2023*

SECTION 1: Identification

Product identifier

Trade name/designation:	TMB Plus, Liquid 1-Component Substrate BIOTECHNOLOGY GRADE
Product No.:	K830
Synonyms:	none
CAS No.:	54827-17-7
Other means of identification:	

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

Recommended use:	For Further Manufacturing Use Only
Uses advised against:	Not for Human or Animal Drug Use

Details of the supplier of the safety data sheet

Supplier

VWR International

Street	2360 Argentia Road
Postal code/City	Mississauga, Ontario Canada L5N 5Z7
Telephone	+1-800-932-5000 toll-free within US/Canada
Telefax	+1-610-728-2103

Emergency phone number

Telephone	+1-613-996-6666 (Canutec, 24 hrs/day, 7 days/week, Canada)

Preparation Information

VWR International - Product Information Compliance

E-mail	SDS@avantorsciences.com

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Classification according to Hazardous Products Regulation (SOR/2015-17)

This substance is classified as not hazardous according to Hazardous Products Regulation (SOR/2015-17)

2.2 Label elements

Labelling in accordance with (SOR/2015-17)

According to Hazardous Products Regulation (SOR/2015-17) the product does not have to be labelled.

Hazard(s) not otherwise classified (HNOC)
none

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name	3,3',5,5'-Tetramethylbenzidine (TMB)
Molecular formula	C16H20N2
Molecular weight	240.35 g/mol
CAS No.	54827-17-7

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

When in doubt or if symptoms are observed, get medical advice. Change contaminated, saturated clothing. Wash contaminated clothing before reuse. Do not leave affected person unattended.

In case of inhalation

Remove casualty to fresh air and keep warm and at rest. Obtain medical attention if symptoms appear.

In case of skin contact

Gently wash with plenty of soap and water. In case of skin reactions, consult a physician.

After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. Obtain medical attention if symptoms appear.

In case of ingestion

Rinse mouth thoroughly with water. Call a doctor if you feel unwell.

Self-protection of the first aider

First aider: Pay attention to self-protection!

4.2 Most important symptoms/effects, acute and delayed

No known symptoms to date.

4.3 Indication of any immediate medical attention and special treatment needed

No special information on medical attention and special treatment available.

SECTION 5: Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media

ABC-powder
Carbon dioxide (CO2).
Dry sand
Nitrogen

Extinguishing media which must not be used for safety reasons

Water spray.
Full water jet

5.2 Specific hazards arising from the chemical

Combustible substance.
This material is combustible, but will not ignite readily.
Fire may produce irritating, corrosive and/or toxic gases.
In case of fire may be liberated:
Carbon monoxide
Carbon dioxide (CO2).
Nitrogen oxides (NOx)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
Protective equipment and precautions for firefighters:
Wear a self-contained breathing apparatus and chemical protective clothing.
Co-ordinate fire-fighting measures to the fire surroundings.
In case of fire: Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Do not breathe dust. Use a dust mask if there is a lot of dust. Remove victim out of the danger area. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Provide adequate ventilation. For emergency responders: In case of fire: Wear self-contained breathing apparatus. In case of major fire and large quantities: Fight fire with normal precautions from a reasonable distance.

6.2 Environmental precautions

No special environmental measures are necessary.

6.3 Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal. Rinse affected areas with water. Dispose according to legislation.

6.4 Reference to other sections

Personal protection equipment (PPE): see section 8 Disposal information: see section 13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling
No special measures are necessary.
Measures to prevent fire, aerosol and dust generation
No special measures are necessary.
Measures required to protect the environment
No special measures are necessary.

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

7.2 Conditions for safe storage, including any incompatibilities

Recommended storage temperature: Store between 2 °C and 8 °C.
Store in a well-ventilated place. Keep container tightly closed. Packaging materials: High density polyethylene (HDPE) Unsuitable container/equipment material: Metal container

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Does not contain substances above concentration limits fixing an occupational exposure limit.

8.2 Engineering controls

Appropriate engineering controls
Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Personal protection equipment (PPE)
Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

Eye/face protection
Eye glasses with side protection

Skin protection
Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

By short-term hand contact	
Suitable material:	NBR (Nitrile rubber)
Thickness of the glove material:	0,12 mm
Breakthrough time	> 480 min

By long-term hand contact	
Suitable material:	NBR (Nitrile rubber)
Thickness of the glove material:	0,38 mm
Breakthrough time	> 480 min

Respiratory protection

Usually no personal respirative protection necessary.

Additional information

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Environmental exposure controls

no data available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical state:	solid
Color:	light yellow
Odor:	no data available

Safety relevant basic data

pH:	no data available
Melting point/freezing point:	166-170 °C
Initial boiling point and boiling range:	402 °C (1013 hPa)
Flash point:	no data available
Flammability:	not applicable
Lower and upper explosion limit	
Lower explosion limit:	no data available
Upper explosion limit:	no data available
Vapor pressure:	no data available
Relative vapour density:	no data available
Density and/or relative density	
Density:	no data available
Solubility(ies)	
Water solubility:	unsoluble (20 °C)
Partition coefficient: n-octanol/water:	4.05 (20 °C)
Auto-ignition temperature:	no data available
Decomposition temperature:	not applicable
Viscosity	
Kinematic viscosity:	no data available
Dynamic viscosity:	no data available
Particle characteristics:	no nanoform

9.2 Other information

Evaporation rate:	no data available
Explosive properties:	no data available
Oxidising properties:	not applicable
Bulk density:	no data available
Refraction index:	no data available
Dissociation constant:	no data available
Surface tension:	no data available
Henry's Law Constant:	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is non-reactive under normal conditions.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions

No further relevant information available.

10.4 Conditions to avoid

No further relevant information available.

10.5 Incompatible materials:

No further relevant information available.

10.6 Hazardous decomposition products

Decomposition products in case of fire: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects

Acute oral toxicity:
no data available

Acute dermal toxicity:
no data available

Acute inhalation toxicity:
no data available

Irritant and corrosive effects:
Primary irritation to the skin:
not applicable

Irritation to eyes:
not applicable

Irritation to respiratory tract:
not applicable

Respiratory or skin sensitization
In case of skin contact: not sensitizing
In case of inhalation: not sensitizing

STOT-single exposure
not applicable

STOT-repeated exposure
not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Carcinogenicity
No indication of human carcinogenicity.

Germ cell mutagenicity
No indications of human germ cell mutagenicity exist.

Reproductive toxicity
No indications of human reproductive toxicity exist.

Aspiration hazard
not applicable

Other adverse effects
no data available

Additional information
no data available

SECTION 12: Ecological information

12.1 Toxicity

Fish toxicity:
no data available

Daphnia toxicity:
no data available

Algae toxicity:
no data available

Bacteria toxicity:
no data available

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water: 4.05 (20 °C)

12.4 Mobility in soil:

no data available

12.5 Results of PBT/vPvB assessment

not applicable

12.6 Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to the environment.

12.7 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

Appropriate disposal / Package

Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

Additional information

Directive 2008/98/EC (Waste Framework Directive)

No further relevant information available.

SECTION 14: Transport information

Land transport (TDG)

No dangerous good in sense of this transport regulation.

Sea transport (IMDG)

No dangerous good in sense of this transport regulation.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Air transport (ICAO-TI / IATA-DGR)

No dangerous good in sense of this transport regulation.

SECTION 15: Regulatory information

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

Domestic Substance List:

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygiensts
DOT - Department of Transportation
IARC - International Agency for Research on Cancer
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
PEL - Permissible Exposure Limit
STV - Short Term Value
SVHC - Substances of Very High Concern
TDG - Transport of Dangerous Goods
TLV - Threshold Limit Value
vPvB - very Persistent, very Bioaccumulative

Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

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30.06.2023	6.2	30.06.2023

Additional information

Indication of changes	Review and revision of Sections 4, 5, 6, 7 and 10. If you need an explanation of the change, contact the supplier (SDS@avantorsciences.com).

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safty precautions. It does not represent any guarantee of the properties of the product. VWR International and his Affiliates shall not be held liable for any damage resulting from handling.