

TMB substrate

MATERIAL SAFETY AND DATA SHEET

Section 1 Chemical Product and Company Identification		
Name	Standard TMB Substrate	Cat.#UP664780, UP664781, UP664782
Synonyms (CAS, chemical names, tradename, abbreviates...)	HRP substrate for ELISA, using 3,3',5,5'-tetramethylbenzidine Dihydrochloride	
Company identification	UPTIMA-INTERCHIM	213 J.F.Kennedy, 03100 Montluçon (FRANCE) Tel.+33 (0)4 70 03 88 55 Fax +33 (0)4 70 03 82 60 e-mail uptima@interchim.com
In case of Emergency	In Europe: Call UPTIMA-INTERCHIM out of office: Centre anti Poisons de Lyon In US: call CHEMTREC	Tel.+33 (0)4 70 03 88 55 Tel. 04 72 11 69 11 Tel. 800;424;9300

Section 2 Composition, Information on hazardous Ingredients						
%w/w	Component	CAS number	EC-no.	Index-no.	REACH-reg.no.	Classification
<5%	N-Methyl- pyrrolidone (NMP)	872-50-4	212-828-1	606-021-00-7	-	EC: Repr. Cat. 2;R61 Xi;R36/37/38 CLP: Repr. 1B;H360D Eye Irrit. 2;H319 STOT SE 3;H335 Skin Irrit. 2;H315

Section 3 Hazards Identification	
Classification of the substance or mixture:	ALTox a/s has concluded the mixture is not to be classified according to EC (67/548 or 1999/45) and CLP (1272/2008).
Label elements:	
CLP:	
EUH210:	Safety data sheet available on request
Other hazards:	None known. PBT/vPvB: The ingredients are not considered PBT/vPvB according to criteria in Annex XIII.

Section 4 First aid Measures	
Emergency / First Aid Procedures	<p>Ingestion: Wash out mouth immediately provided that person is conscious. Obtain medical attention.</p> <p>Inhalation: Remove the exposed person to fresh air and support breathing, if necessary. Obtain medical attention</p> <p>Eye Contact: Immediately flush eyes thoroughly with fresh water. Remove contact lenses, if any, and seek medical attention</p> <p>Skin Contact: Remove contaminated clothing and wash effected skin with soap and water. Seek medical attention if irritation is noted</p> <p>Most important symptoms and effects, both acute and delayed: Larger amounts of vapours may cause fatigue, dizziness, headache, nausea and vomiting. Prolonged exposure to vapours may result in damage on liver, kidneys, blood or central nervous system (including brain damage).</p> <p>Indication of any immediate medical attention and special treatment needed: Show this Safety Data Sheet to a physician or emergency ward.</p>

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Section 5 Fire Fighting Measures	
Flammability	Not flammable. Do not breathe smoke fumes. In case of strong heat or fire, the product may form hazardous decomposition product such as oxides of carbon and nitrogen. Advice for fire-fighters: When entering burning area: Wear self-contained breathing apparatus.
Extinguishing media	Not relevant

Section 6 Accidental Release Measures	
Personal precautions, protective equipment and emergency procedures	Use personal protective equipment - see section 8. Avoid further spreading. Ventilate area of leak or spill.
Environmental precautions	Do not empty into drains - see section 12. Inform appropriate authorities in accordance with local regulations.
Methods and material for containment and cleaning up	Sweep up with paper towels or absorb with inert material and place in a suitable container for disposal. Flush area of spill with plenty of water. Further handling of spillage - see section 13.
Reference to other sections	See above.

Section 7 Handling and Storage	
Precautions for safe handling	Avoid breathing vapours. Provide adequate ventilation e.g. by working in a fume cupboard. Avoid contact with skin, eyes and clothing. Change contaminated clothes. After work wash hands with water and mild soap.
Conditions for safe storage, including any incompatibilities	In tightly closed container, at temperatures from 4 to 8°C.

Section 8		Exposure Controls, Personal Protection	
Control parameters			
Occupational exposure limits (EH40/2007)	8-hour TWA	15-min STEL	Comments
N-methyl-2-pyrrolidone:	25 ppm = 103 mg/m3	75 ppm = 309 mg/m3	Sk = Absorbed through skin.
DNEL/PNEC: No CSR			
Exposure controls	Appropriate engineering controls: Work in fume cupboard or use process ventilation.		
Personal protective equipment:			
Respiratory protection	Not required when sufficient ventilation is provided. In case of inadequate ventilation: Use an approved mask with gas filter type A (Brown - for organic vapours). The filter has a limited lifetime and must be changed. Read the instruction.		
Skin protection	Wear protective gloves of e.g. nitrile. Data on breakthrough times is not available for all ingredients and therefore it is recommended to change the glove when spilled on.		
Eye protection	Use safety goggles when there is a risk of splashes.		
Environmental exposure	None particular.		

Section 9 Physical Characteristics
Information on basic physical and chemical properties

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Appearance	Clear liquid
Odour:	Characteristic
Odour threshold:	Not determined
pH:	Not determined
Melting point/freezing point (oC):	Not determined
Initial boiling point and boiling range (oC):	Not determined
Decomposition temperature (oC):	Not determined
Flash point (oC)	Not determined
Evaporation rate (water = 1)	Not determined
Flammability (solid, gas):	Not relevant
Upper/lower flammability or explosive limits (vol-%):	Not determined
Vapour pressure (mmHg, 20oC):	Not determined
Vapour density (Water = 1):	Not determined
Relative density (Water = 1):	Not determined
Solubility (water):	Complete
Partition coefficient: n-octanol/water:	Not determined
Auto-ignition temperature (oC):	Not determined
Viscosity:	Not determined
Explosive properties	Not relevant
Oxidising properties:	Not relevant
Other information:	None relevant.

Section 10 Stability and Reactivity Data	
Reactivity:	No available information.
Chemical stability:	Stable under normal conditions.
Possibility of hazardous reactions:	None known.
Conditions to avoid:	None known.
Incompatible materials:	Strong oxidizing agents.
Hazardous decomposition products:	Thermal decomposition may produce oxides of carbon and nitrogen.

Section 11 Toxicological Information			
Information on toxicological effects:			
Hazard class	Data (NMP)	Test	Reference
Acute toxicity:			
Inhalation	LC50 (rat) > 5,1 mg/l/4h	OECD 403	IUCLID
Dermal	LD50 (rabbit) = 2000-4000 mg/kg	No info	IUCLID
Oral	LD50 (rat) = 3600 mg/kg	No info	IUCLID
Corrosion/irritation:	Moderate skin irritation, human and eye irritation, rabbit	Observations / Draize	IUCLID
Sensitization	No skin sensitization, human	Patch	IUCLID
CMR	No mutagenicity, in vivo, mouse, oral	Micronucleus	IUCLID
	No carcinogenicity, rat, inhalation	2 year study	IUCLID
	TDLo (Inhalation., rat) = 116 ppm/6H: "Effects on embryo or fetus"	Multigeneration	RTECS
Information on likely routes of exposure: Lungs, skin and gastrointestinal tract.			
Symptoms:			
Inhalation:	May cause irritation of the mucous membranes. Larger amounts may cause dizziness, headache		
Skin:	May cause irritation. N-methyl-2-pyrrolidone may be absorbed through the skin.		
Eyes:	May cause irritation with redness.		
Ingestion:	May cause irritation to mucous membranes in mouth, throat and stomach and symptoms as for "inhalation"		
Chronic effects:	Prolonged or frequent exposure to vapours of volatile organic compounds may result in damage on liver, kidneys, blood or central nervous system (including brain damage). According to animal tests, N-methyl-2-pyrrolidone may cause harm to the unborn child.		

Section 12 Ecological Information			
toxicity			
Aquatic	Data (NMP)	Test (Media)	Reference
Fish	LC50 (Lepomis macrochirus, 96h) = 832 mg/l	Static (FW)	IUCLID
Crustacean	EC50 (Daphnia magna, 48h) = 4897 mg/l	No info (FW)	UCLID
Algae	EC50 (Scenedesmus subspicatus, 72h) > 500 mg/l	IN 38412 (FW)	IUCLID
Persistence and degradability:			
N-Methyl-2-pyrrolidone is readily biodegradable.			
Bioaccumulative potential:			
N-Methyl-2-pyrrolidone: Log Kow < 1. No significant bioaccumulation.			
Mobility in soil:			
N-Methyl-2-pyrrolidone: Koc (estimated) < 10. Very large mobility is expected in soil.			
Results of PBT and vPvB assessment:			
Ingredients are not considered PBT/vPvB according to criteria in Annex XIII.			
Other adverse effects:			
None known.			

Section 13 Disposal Considerations
Waste treatment methods:
Disposal should be according to local, state or national legislation. Dispose of through authority facilities or pass to chemical disposal company. EWC-Code: 16 05 09

Section 14 Transport Information
Not dangerous goods (ADR/RID).
UN-no.: - UN proper shipping name: - Transport hazard class(es): - Packing group: -
Environmental hazards: None.
Special precautions for user: None.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not relevant.

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Section 15 Regulatory Information	
Safety, health and environmental regulations/legislation specific for the substance or mixture:	
The employer shall assess the working conditions and, if there is any risk to the safety or health and any effects on the pregnancy or breastfeeding of workers, take the necessary measures to adjust the working conditions (Directive 92/85/EEC).	
Chemical Safety Assessment:	
No CSR.	
Section 16 Additional Information	
MSDS validation	UPTIMA-INTERCHIM – I05E-E09E
R-phrases and hazard statements mentioned in section 2 and 3	
R 36/37/38:	Irritating to eyes, respiratory system and skin.
R 61:	May cause harm to the unborn child.
H315:	Causes skin irritation.
H319:	Causes serious eye irritation.
H335:	May cause respiratory irritation.
H360D:	May damage the unborn child.
Abbreviations:	
CMR	Carcinogenicity, mutagenicity and reproductive toxicity
CSR	Chemical Safety Report
DNEL	Derived No-Effect Level
EC50 / LC50 / LD50	Effect/Lethal Concentration/Dose 50%
PBT	Persistent, Bioaccumulative, Toxic
PNEC	Predicted No-Effect Concentration
TDLo	Toxic Dose Low
vPvB	very Persistent, very Bioaccumulative
Literature	
IUCLID:	International Uniform Chemical Database Information.
RTECS:	Register of Toxic Effects of Chemicals Substances.
Training advice:	
No special training is required. However, the user should be well instructed in the execution of the task, be familiar with this Safety Data Sheet and have normal training in the use of personal protective equipment.	
Comment	<i>The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages</i>

Label elements (67/548 or 1999/45):

EC:

Safety data sheet available for professional user on request.

Changes since the previous edition:

2, 3 and 16.