

# MATERIAL SAFETY DATA SHEET-v4

Product NBT/BCIP substrate

Cat. no. R008R.0000

**Pan  
Path**

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

### Identification of the product

Name : NBT/BCIP substrate

Product code : R008R.0000

### Produced and Marketed by

PanPath B.V.

Science Park Amsterdam

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## 2. COMPOSITION AND INFORMATION ON INGREDIENTS

- NBT (Molecular formula  $C_{40}H_{30}Cl_2N_{10}O_6$  in  $C_8H_7NO$ ; Molecular weight 817.65)
- BCIP (Molecular formula  $C_8H_6NO_4BrClP.C_7H_9N$ ; Molecular weight 433.6)

Both ingredients are classified according to EEC Directive 88/379, the chemicals act and hazardous goods regulations as hazardous.

- TRIS
- Dimethylformamide
- Sodium Azide (CAS-No. 26628-22-8; EINECS-No. 247-852-1; Molecular weight 65.01; Molecular formula  $N_3Na$ ; S: T+)

## 3. IDENTIFICATION OF HAZARDS AND EFFECTS

### Conditions to avoid

Excess heat, flame or pressure.

### Substances to avoid

$N_3Na$  liberates very toxic gas in contact with acids.

### Hazardous combustion or decomposition products

Hydrochloric acid and nitric oxides.

### Fire and explosion hazards

Inflammable. Emits toxic fumes under fire conditions. Keep away from inflammable sources.

## 4. FIRST AID MEASURES

EXPOSURE	FIRST AID MEASURES
Inhalation	Fresh air. Consult doctor if feeling unwell.
Eye contact	Flush with copious amounts of water with eyelid held wide open. Summon eye specialist if necessary.
Skin contact	Wash with copious amounts of water. Remove contaminated clothing.
Ingestion	<b>Summon doctor immediately!</b> Watch out for vomiting; danger of breathing difficulties. Keep bronchial tubes free.

## 5. FIRE FIGHTING MEASURES

Suitable extinguishing media : water spray, carbon dioxide, dry chemical powder or appropriate foam.

Special fire fighting procedure : not required.

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### 6. ACCIDENTAL RELEASE MEASURES

Take up with liquid-absorbent material, or absorb with fluid binders and dispose off suitably. Forward for disposal and clean up affected area. Replace contaminated clothing immediately. There is no restriction of spilled substance. Consult a specialist for disposal of the spilled substance.

### 7. HANDLING & STORAGE INFORMATION

#### *Handling information*

No special requirements.

#### *Storage information*

Store at 2-8 °C.

### 8. PERSONAL PRECAUTIONS & PROTECTION

#### *Personal precautions*

The usual precautions taken when handling chemicals should be observed. Refer to product data sheet for recommended specific use. Do not inhale vapors, do not get in eyes, on skin or clothing. Wash hands thoroughly after handling.

#### *Personal protection*

Respiratory protection : None required if ventilation is adequate.

Skin protection : Required. Wear suitable protective clothing and gloves.

Eye protection : Required. Wear safety glasses or goggles.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	liquid	Flashing point:	no data available
Color:	reddish-brown	Explosion limits	
Odor:	odorless	lower limit:	2.2 Vol%
pH at 200 g/l H <sub>2</sub> O (20 °C):	4.5 – 5.5	upper limit:	16.0 Vol%
Viscosity <sub>dynamic</sub> (20°C):	no data available	Vapor pressure (25°C):	4 hpa
Boiling range:	no data available	Relative density:	no data available
Melting point:	no data available	Solubility in water:	completely
Autoflammability:	no data available	log P(o/w):	no data available

### 10. STABILITY & REACTIVITY

#### *Stability*

There are no hazardous reactions when the substance is used appropriately. Hazardous decomposition products arise only in small concentrations.

#### *Reactivity*

No data available

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### 11. TOXICOLOGICAL INFORMATION

#### *Toxicological information*

LD<sub>50</sub> oral: 2800 mg/kg (rat)

LD<sub>50</sub> skin: 1400 mg/kg (rat)

LD<sub>50</sub> oral: 3750 mg/kg (mouse)

LD<sub>50</sub> inhale: 2880 PPM (mouse)

#### *Health effects (Acute and chronic)*

The toxicological properties of this product have not been determined. It contains DMF which is a potent liver and kidney toxin. It may be fetotoxic. Symptoms of exposure may include: irritation and nausea. Alcohol intolerance is possible and can last up to 4 days following exposure. It contains NBT salts which can be irritating to the eyes, skin and respiratory tract. It also contains toluidine which is suspected of being a cancer-causing agent. It may cause methemoglobin (reduced oxygen content in the body). Symptoms may include grayish skin color, headache and dizziness.

#### *Chronic effects*

May cause birth defects.

### 12. ECOLOGICAL INFORMATION

Biologic degradation: no data available.

Behavior in environmental compartments: no data available.

Ecotoxic effects: substance is slightly hazardous to the water supply.

### 13. DISPOSAL CONSIDERATIONS

Product: there are no uniform EC regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste.

Packaging: disposal in accordance with local provisions. Contaminated packages should be treated the same as the product itself.

### 14. TRANSPORT INFORMATION

Classification for transport by air/see: must be treated as hazardous goods according to current regulations for transportation of Hazardous goods (GGVS/ADR, GGVE/RID, IMDG, IATA/ICAO)

### 15. REGULATORY INFORMATION

Labeling according to ECC directives.

<u>R</u>	<u>S</u>	<u>SYMBOL</u>
61-20/21-36	53-45	T
28-32-50/53	28-45-60-61	T+ N
36/38		Xi
34, 37		
20/21/22	7/13, 2/13	Xn

Label precautionary statements: harmful by inhalation, in contact with skin and if swallowed. May cause birth defects. Irritating to

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eyes, respiratory system and skin.

### **16. ADDITIONAL INFORMATION (IF APPLICABLE)**

*The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product. We make no warranty express or implied, with respect to the information and assume no liability. Product users should determine the suitability of this information for their own uses.*