



THE CARBON NANOTUBE SPECIALIST

NANO-ENGINEER YOUR FUTURE

Date: 2 June 2009

BIOCYL™ PRIMER P3 / MSDS / Page 1/7

Revision N°2

Supersedes: 17 March 2009

## BIOCYL™ PRIMER P3 Material Safety Data Sheet

### 1. Identification of the product and the company

Trade Name: BIOCYL™ PRIMER P3  
 Type of product: Primer for adhesion

Company: Nanocyl sa  
 Rue de l'Essor, 4  
 B-5060 Sambreville  
 Belgium

Phone: + 32 71 750 380 (office hour)  
 Fax: + 32 71 750 390  
 E-mail: info@nanocyl.com

### 2. Hazards identification

Hazard designation: **Xn** Harmful  
**F** Highly flammable  
**N** Dangerous for the environment

Health hazards: **R11** Highly flammable  
**R36/38** Irritating to eyes and skin.  
**R50/53** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
**R65** Harmful: may cause lung damage if swallowed.  
**R67** Vapours may cause drowsiness and dizziness.

### 3. Composition/information on ingredients

Components	N° CAS	% (wt.)	Classification
Allyltrimethoxysilan	2551-83-9	8 %	Xn R10 R22
Titantetrabutanolat	5593-70-4	5 %	Xi R10 R36/38
Heptan	142-82-5	87 %	F Xi Xn N R11 R38 R50/53 R65 R67

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 BELGIUM sales@nanocyl.com

#### US contact

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#### 4. *First aid measures*

After skin contact:	In case of skin contact, rinse thoroughly with soap and plenty of water. Obtain medical attention if irritation persists.
Eye contact:	Hold the eyes open and rinse with water for a sufficiently long period of time (at least 10 minutes). Obtain medical attention if pain, blurred vision, swelling, burning or redness persist.
After inhalation:	If vapours are inhaled, move the person into fresh air, keep warm and allow to rest. If breathing is difficult, oxygen may be administered and medical attention should be obtained.
Ingestion:	Rinse mouth with water and obtain medical attention. Never give anything by mouth to an unconscious person.

#### 5. *Fire-fighting measures*

Suitable extinguishing media:	Water fog, foam, Carbon Dioxide, Dry Chemical.
Specific hazards:	Cool fire exposed containers with water. Vapors are heavier than air, so they might creep to distant sources of ignition. Vapors may form explosive mixture with air.
Protective equipments:	Wear self-contained breathing apparatus. Wear suitable protective clothing.
Combustion products:	May form toxic materials, carbon monoxide, carbon dioxide, silica, formaldehyde.

#### 6. *Accidental release measures*

Personal precautions:	Equip cleanup crew with proper protection (see chapter 8). Material can create slippery conditions.
Environmental precautions:	Prevent entry to sewers, rivers and public waters. Construct a dike to prevent spreading. Remove contaminated soil to remove contaminated trace.

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BIOCYL™ PRIMER P3 / MSDS / Page 3/7

Supersedes: 17 March 2009

Spill Procedures: Approach suspected leak areas with caution. Cover with dry and non-flammable inert absorbent material and collect for disposal.

## 7. Handling and storage

Handling: Good ventilation of the workplace required. Handle in accordance with good industrial hygiene and safety procedures. Contact with the skin and the eyes must be avoided. Wash with soap and water before eating, drinking, smoking, applying cosmetics, or using toilet facilities. Launder contaminated clothing before reuse. Do not breathe vapours.

Storage: Keep only in the original closed container in a dedicated place. Keep containers in a cool, dry place with adequate ventilation. Keep away from open flames. Avoid direct sun and heat.

## 8. Exposure controls / personal protection

Components with workplace parameters:

Component	Country	Short-term values	Long-term values
142-82-5	Germany ; MAK	2000 mg/m <sup>3</sup> ; 500 ppm	/
Heptan	Belgium	2085 mg/m <sup>3</sup> ; 500 ppm	1664 mg/m <sup>3</sup> ; 400 ppm
2551-83-9	Germany ; MAK	200 ppm	/
Allyltrimethoxysilane	Belgium	266 mg/m <sup>3</sup> ; 200 ppm	333 mg/m <sup>3</sup> ; 250 ppm

Personal protective equipment:

Hand protection: Protecting gloves, for example in nitrile rubber.

Skin and body protection: Wear chemical-resistant gloves and other clothing as required to minimize contact.

Respiratory protection: Wear appropriate respirator when ventilation is inadequate or in case of prolonged exposure or in other circumstances where the TWA may be approached or exceeded.

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BIOCYL™ PRIMER P3 / MSDS / Page 4/7

Revision N°2

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Eye protection: Chemical goggles or safety glasses.

In case of contact, ensure prompt removal from eyes, skin and clothing. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and leaving work. Facilities storing or utilizing this material should be equipped with an eyewash facility.

## 9. Physical and chemical properties

Form and Color:	colorless (yellowish) liquid
Odor:	characteristic
Boiling point:	> 90 °C
Melting point:	not determined
Flash point:	-12.8 °C (Pensky-Maartens Closed Cup)
Density:	0.71 g/ml at 20 °C
Viscosity:	0.63 at 25 °C
Solubility in water:	insoluble

NOTE: The physical data presented above are typical values and should not be construed as a specification.

## 10. Stability and reactivity

Stability: Stable under normal conditions. Hazardous polymerization will not occur.

Materials to avoid: Strong oxidizing agents.

Hazardous combustion or decomposition products: Formation of flammable vapor/air mixtures possible at temperature > 150 °C. Small amounts of formaldehyde might be possible.

## 11. Toxicological information

Ingestion: Can cause serious injury if aspirated into the lungs. Forms methanol and may cause injury to man at doses > 200 mg/kg.

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BIOCYL™ PRIMER P3 / MSDS / Page 5/7

Revision N°2

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Inhalation: Vapors may cause drowsiness and dizziness, headache, nausea and in case of high concentration absence.

Skin: Irritating, long and repeated contact may cause defatting of the skin. Risk of dermatitis.

Eyes: Irritating.

## 12. Ecological information

Environmental fate distribution: Organic solvents may evaporate into the atmosphere, where they degrade. Siloxanes are removed from water by sedimentation or binding to sewage sludge. In soil, siloxanes are degraded.

Ecotoxicity effects: Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

## 13. Disposal considerations

Product: If the material becomes a waste, consider it as special waste. It can be destroyed by incineration in accordance with local, state and federal regulations.

Container: Empty containers can be landfilled after cleaning, when in compliance with the Environmental Protection Regulation.

## 14. Transport information

### ADR/RID:

UN-No: 1206  
Class: 3  
Packaging group: II  
Risk No.: 33  
ADR/RID-Labels: 3  
Proper shipping name: Heptanes

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BIOCYL™ PRIMER P3 / MSDS / Page 6/7

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#### IMDG:

UN-No: 1206  
Class: 3  
Packaging group: II  
Labels: 3  
Proper shipping name: Heptanes

#### IATA :

UN-No: 1206  
Class: 3  
Packaging group: II  
Labels: 3  
Proper shipping name: Heptanes

### 15. Regulatory information

#### Labelling according to EEC Directive

Symbol(s) :	<b>Xn</b>	Harmful
	<b>F</b>	Highly flammable
	<b>N</b>	Dangerous for the environment
R Phrase(s) :	<b>R11</b>	Highly flammable.
	<b>R36/38</b>	Irritating to eyes and skin.
	<b>R50/53</b>	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
	<b>R65</b>	Harmful: may cause lung damage if swallowed.
	<b>R67</b>	Vapours may cause drowsiness and dizziness.
S Phrase(s) :	<b>S23</b>	Do not breathe spray.
	<b>S26</b>	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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BIOCYL™ PRIMER P3 / MSDS / Page 7/7

Supersedes: 17 March 2009

<b>S33</b>	Take precautionary measures against static discharges.
<b>S37</b>	Wear suitable gloves.
<b>S51</b>	Use only in well-ventilated areas.
<b>S60</b>	This material and its container must be disposed of as hazardous waste.

## 16. Other information

### R-phrases components

R10	Flammable
R22	Harmful if swallowed

The contents and format of this MSDS are in accordance with EEC Regulation REACH 1907/2006 art. 31.

**Disclaimer:** Nanocyl s.a. provides the information contained herein in good faith and makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material.

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