



THE CARBON NANOTUBE SPECIALIST

NANO-ENGINEER YOUR FUTURE

Date: 2 June 2009

Revision N°2

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Supersedes: 17 March 2009

BIOCYL™ PRIMER P2 Material Safety Data Sheet

1. Identification of the product and the company

Trade Name: BIOCYL™ PRIMER P2
 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.
R38 Irritating to skin.
R51/53 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
Tetraethyl silicate	78-10-4	< 5 %	Xn R10 R20 R36/37
Titanium tetrabutanolate	5593-70-4	< 10%	Xi R10 R36/38
Toluene	108-88-3	< 5 %	F Xn R11 R20 R38 R48 R63 R65 R67
Isoalkanes C7 – C10	90622-56-3	> 50 %	F Xn N R11 R38 R51/53 R65 R67

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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:	Do not induce vomiting. Rinse mouth with water and obtain medical attention. Never give anything by mouth to an unconscious person.

5. *Fire-fighting measures*

Suitable extinguishing media:	Extinguishing powder, CO2, alcohol-resistant foam.
Non suitable extinguishing media:	Water.
Specific hazards:	Cool fire exposed containers with water. Heavy soot formation during combustion. 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.

6. *Accidental release measures*

Personal precautions:	Equip cleanup crew with proper protection (see chapter 8). Avoid inhaling mists and vapours. Avoid contact with eyes and skin.
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Environmental precautions: Do not allow product to reach sewage system or any water course. Inform authorities if substance leaks into surface water, sewage or ground. Dam in any fluid that runs out using suitable material (e.g. earth). Retain contaminated water/extinguishing water. Dispose of in prescribed marked containers.

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.

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 and high temperature. Make sure there is no possibility of entering the ground.

8. Exposure controls / personal protection

Components with workplace parameters:

Component	Country	Short-term values	Long-term values
108-88-3 Toluene	Germany ; MAK Belgium	/ 384 mg/m ³ ; 100 ppm	190 mg/m ³ 192 mg/m ³ ; 50 ppm
71-36-3 Butanol	Germany ; MAK Belgium	/ /	150 mg/m ³ 154 mg/m ³ ; 50 ppm
64-17-5 Ethanol	Germany ; MAK Belgium	/ /	960 mg/m ³ ; 500 ml/m ³ 1907 mg/m ³ ; 1000 ppm
78-10-4 Tetraethyl silicate	Germany ; MAK Belgium	/ /	170 mg/m ³ 86 mg/m ³ ; 10 ppm

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Personal protective equipment:

- Hand protection: Nitrile rubber gloves, gloves made of fluorinated rubber. Gloves suitable for up to 60 min use.
- Skin and body protection: Wear chemical-resistant gloves and other clothing as required to minimize contact.
- Respiratory protection: Wear appropriate respirator (gas mask filter A) when ventilation is inadequate or in case of prolonged exposure or in other circumstances where the TWA may be approached or exceeded.
- 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: yellowish liquid
- Odor: slight
- Boiling point: 16-142 °C
- Melting point: not determined
- Vapor pressure: 8 hPa at 20 °C
- Viscosity: 0.76 mPa.s at 25 °C
- Flash point: 9 °C
- Ignition temperature: 420 °C
- Density: 0.756 g/ml at 20 °C
- Solubility in water: virtually insoluble

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

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10. Stability and reactivity

Stability:	Stable under normal conditions. Hazardous polymerization will not occur.
Materials to avoid:	Reacts with acids, water and alkalis (formation of alcohols).
Conditions to avoid:	Moisture.
Hazardous combustion or decomposition products:	None. Under the effect of humidity: butanol, ethanol.

11. Toxicological information

Ingestion:	Can cause serious injury if aspirated into the lungs. Kidney and bone marrow damage were described.
Inhalation:	Vapors may cause drowsiness and dizziness, headache, nausea and in case of high concentration absence.
Skin:	Irritating.
Eyes:	Irritating.

12. Ecological information

Environmental fate distribution:	Organic solvents may evaporate into the atmosphere, where they degrade.
Ecotoxicity effects:	Toxic to aquatic organisms. Harmful to aquatic organisms.

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

14. Transport information

ADR/RID:

UN-No: 1993
Class: 3
Packaging group: II
Risk No.: 33
ADR/RID-Labels: 3
Proper shipping name: Flammable liquid, nos
Contains: C7-C10 isoalkanes solution

IMDG:

UN-No: 1993
Class: 3
Packaging group: II
Labels: 3
Proper shipping name: Flammable liquid, nos
Contains: C7-C10 isoalkanes solution

IATA :

UN-No: 1993
Class: 3
Packaging group: II
Labels: 3
Proper shipping name: Flammable liquid, nos
Contains: C7-C10 isoalkanes solution

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15. Regulatory information

Labelling according to EEC Directive

Symbol(s) :	Xn	Harmful
	F	Highly flammable
	N	Dangerous for the environment
R Phrase(s) :	R11	Highly flammable.
	R38	Irritating to skin.
	R51/53	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.
S Phrase(s) :	S2	Keep away from children.
	S9	Store in well ventilated areas.
	S16	Keep away from sources of ignition-No smoking.
	S23	Do not breathe vapour, spray.
	S56	Dispose of this material and its container to hazardous or special waste collection point.
	S61	Avoid release to the environment. Refer to special instruction/safety data sheets.
	S62	If swallowed, do not induce vomiting: seek medical advice immediately and show the container label.

16. Other information

R-phrases components

R10	Flammable.
R20	Harmful by inhalation.
R36	Irritating to eyes.
R37	Irritating to respiratory system.
R48	Danger of serious damage to health by prolonged exposure.
R63	Possible risk of harm to the unborn child.

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

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