

ELASTOCYL™

CNT elastomers concentrates

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Product identifier used on the label: ELASTOCYL™ X1-Polyester Polyol MB

Other means of identification: Carbon/polyester polyol Masterbatch

REACH Registration Number (RRN): Not applicable.

Belgium Nanoregister Number: Please consult Nanocyl S.A.

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

General use: Casting.

Identified Uses: For Industrial and Professional use only.

Uses Advised against: Not intended for food contact applications, toys or medical devices.

1.3 Details of the supplier of the safety data sheet

Manufacturer: Nanocyl S.A.
Rue de l'Essor, 4 - B-5060 Sambreville - Belgium
Phone: + 32 71 750 380 (office hours) - Fax: + 32 71 750 390
E-mail: info@nanocyl.com

1.4 Emergency telephone number

Phone: + 32 71 750 380 (office hours, English and French)

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 (CLP)

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 [CLP].

This product is not classified as hazardous according to Regulation OSHA GHS 29 CFR 1910.1200.

2.1.2 Additional information: None.

2.2 Label elements

- * Pictograms: not applicable
- * Signal words: not applicable
- * Hazard statements: not applicable
- * Precautionary statements: not applicable

2.3 Other hazards: May be irritating to eyes, respiratory tract and skin.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Substances	EC Number / List number	CAS Number	Reach Registration Number	% (wt.)	Classification
Hexanedioic acid, polymer with 1,2-ethanediol	Polymer	24938-37-2	-	> 95	-
Short tangled Multi-walled carbon nanotubes (MWCNTs) obtained by catalytic chemical vapour deposition-Synthetic graphite in tubular shape	- / 936-414-1	-	01-2119879048-26	< 5	-

SECTION 4. First aid measures

4.1 Description of first aid measures

- After skin contact: In case of contact with molten product, immediately flood the affected area with cold water. Do not pull solidified product away from the skin. Transport to nearest medical facility for additional treatment. If irritation develops, consult a physician.
- After 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

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to rest. If breathing is difficult, oxygen may be administered and medical attention should be obtained.

Ingestion:

Get medical attention if necessary. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.

4.2 Most important symptoms and effects, both acute and delayed: See Section 2.

4.3 Indication of any immediate medical attention and special treatment needed: Treat symptomatically.

SECTION 5. Firefighting measures

5.1 Extinguishing media

Suitable media: Water fog, Foam, Carbon Dioxide, Dry Chemical.

Unsuitable media: High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards: /

Hazardous combustion products: May form toxic fumes, carbon monoxide, carbon dioxide, metal oxides.

5.3 Advice for firefighters

Protective equipment's: Wear self-contained breathing apparatus. Wear suitable protective clothing.

Further information: Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure that there are sufficient retaining facilities for media used to extinguish fire.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Equip cleanup crew with proper protection (see chapter 8).

Avoid contact with skin, eyes and clothing with product. Do not inhale vapours, mist or dust.

6.2 Environmental precautions:

Collect for disposal. Avoid discharge to natural waters, sewers and biological wastewater treatment plants.

6.3 Methods and material for containment and cleaning up:

Collect spilled product as it could cause falls.

Use absorbent material to collect and contain for disposal. If molten, allow material to cool and place into an appropriate marked container for disposal.

6.4 Reference to other sections: See Sections 8 and 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Provide adequate ventilation of stores and work.

Handle in accordance with good industrial hygiene and safety procedures. See section 8 for personal protective equipment.

Avoid spilling the product, as it might cause falls.

Recommended process temperature: 70 - 80°C.

7.2 Conditions for safe storage, including any incompatibilities

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.

Storage temperature: 10 - 40°C. Do not freeze.

7.3 Specific end use(s): Not applicable.

SECTION 8. Exposure controls / Personal protection

8.1 Control parameters

Apply technical measures to comply with the Occupational Exposure Limits. The Occupational Exposures Limits values are country or region specific. Please check which values are applicable at your workplace.

No official Occupational Exposure Limit has yet been established for the carbon nanotubes in this product. Obtain special instructions before use.

Derived No Effect Level (DNEL) for MWCNT – Inhalation - long term exposure of workers: 0,05 mg/m³

8.2 Exposure controls

8.2.1 Appropriate engineering controls:

Technical measures to prevent exposure:

Provide adequate ventilation. Provide local ventilation appropriate to the product decomposition risk.

8.2.2 Personal protection equipment:

8.2.2.1 Eye and face protection: Chemical goggles or safety glasses.

Recommended: Use eye protection according to EN 166.

8.2.2.2 Skin protection:

Hand protection:

Wear chemical resistant gloves when handling material depending on the risk assessment.

Recommended: Wear suitable gloves according to EN374. Glove material: Nitrile rubber (Thickness: 0,4 mm and min breakthrough time: 8h), Chloroprene rubber (Thickness: 0,5 mm, and min breakthrough time: 8h), Butyl rubber (Thickness: 0,7 mm and min breakthrough time: 8h).

Body protection:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

8.2.2.3 Respiratory protection:

Dust formation:

Not applicable.

Elevated temperature:

In case of inadequate ventilation, wear respiratory protection.

Use appropriate respiratory protection.

Recommended: Respirator with filter P2 or NIOSH-certified respirator.

8.2.2.4 Thermal hazards:

Elevated temperature:

Wear heat resistant gloves when handling molten material.

8.2.3 Environmental exposure controls:

Collect for disposal. Avoid discharge to natural waters, sewers and biological wastewater treatment plants.

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. Change contaminated clothing immediately.

9.1 Information on basic physical and chemical properties

Appearance:	black waxy solid to black viscous liquid
Odour/Odour threshold:	odorless
pH:	6 – 8 (estimated)
Solubility in water:	insoluble
Melting point/freezing point:	solidification under ~ 30°C
Initial boiling point and boiling range:	> 200°C (estimated)
Flash point:	> 160°C (estimated)
Decomposition temperature:	No data available.

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Smouldering temperature:	No data available.
Auto-ignition temperature:	> 360°C (estimated).
Evaporation rate	Not applicable.*
Viscosity:	~580 mPa.s @ 75°C (estimated).
Vapour pressure:	< 0.1 mmHg at 20°C (estimated).
Vapour density:	Not applicable.*
Density:	~1 g/cm ³ (measured)
Flammability (solid, gas):	Not fulfilling GHS/CLP criteria.
Oxidising properties	Not fulfilling GHS/CLP criteria.
Explosive properties	Not fulfilling GHS/CLP criteria.

* Testing can be waived because substance is a solid.

9.2 Other information

Bulk density: No information available.

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

SECTION 10. Stability and Reactivity

10.1 Reactivity: No hazardous reaction when handled and stored according to provisions.

10.2 Chemical stability: Stable under normal handling and storage conditions.

10.3 Possibility of hazardous reactions: Hazardous polymerization will not occur.

10.4 Conditions to avoid:

Avoid heating up to thermal decomposition temperature (see Section 9.1).

Avoid exposure to moisture.

10.5 Incompatible materials: Strong oxidizing materials, acids, alkalines, isocyanates.

10.6 Hazardous decomposition products:

No hazardous decomposition products known at room temperature.

May form hazardous decomposition products when exposed to high temperatures (see also Section 5.2).

SECTION 11. Toxicological information

11.1 Information on toxicological effects

No data available on the product itself.

Acute toxicity:

Test material	Route of exposure	LD50
MWCNT	Oral	> 5000 mg/kg
MWCNT	Dermal	> 2000 mg/kg

Skin corrosion/irritation - Serious eye damage/irritation:

Test material	Organ	Result
Polyester polyol	eye	May cause temporary eye irritation.
Polyester polyol	eye	May cause mild skin irritation.
MWCNT	skin	Not irritant
MWCNT	eye	Not irritant

Respiratory or skin sensitization: No data available.

Germ cell mutagenicity:

Test material	Method	Result
MWCNT	<i>In vitro</i> , AMES test	Negative

Carcinogenicity:

Test material	Exposure	Species	Result
MWCNT	2-years, intraperitoneal	rat	No carcinogenic response

Reproductive toxicity: No data available.

Summary of evaluation of the CMR properties: No data available.

STOT-single exposure: No data available.

Test material	Method	Result
Polyester polyol	Possible hazard	May cause respiratory irritation.
MWCNT	Possible hazard	May be harmful if inhaled.

STOT-repeated exposure:

Test material	Exposure	Species, Target organ	Result
MWCNT	28 days, oral	rat	NOAEL: 0.5 mg/kg
MWCNT	5 days, inhalation	rat, lung (pulmonary inflammation)	LOAEC: 2 mg/m ³
MWCNT	90 days, inhalation	rat, lung (multifocal granulomatous inflammation)	LOAEC: 0.1 mg/m ³

Aspiration hazard: No data available

When used and handled according to specifications, the product does not have harmful effects according to our experience and the information provides to us. From a toxicological point of view, the material behaves as the base polymer if there is no dust formation and the operators follow the manipulation instructions of Section 7 and 8.

SECTION 12. Ecological information

12.1 Toxicity

No data available on the product itself.

Acute toxicity

Test material	Study type	Result
MWCNT	Fish, 14 days	LC50: > 100 mg/l
MWCNT	Daphnia, 48 hours	EC50: > 100 mg/l
MWCNT	Algae, 72 hours	EC50: 134 mg/l

Chronic toxicity

Test material	Study type	Result
MWCNT	Fish, semi static	EC10: 100 mg/l
MWCNT	Daphnia, semi static	NOEC: > 25 mg/l

12.2 Persistence and degradability: Not readily biodegradable (according to OECD criteria).

12.3 Bioaccumulative potential

Bioconcentration factor (BCF): No data available.

12.4 Mobility in soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available on product itself.

This mixture contains substances that are assessed to be a PBT or a vPvB. See Section 15.

12.6 Other adverse effects: /

SECTION 13. Disposal considerations

13.1 Waste treatment methods

13.1.1 Product / Packaging disposal:

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. For all countries, the disposal methods must be in compliance with national and provincial laws and any municipal or local by-laws.

Container: Empty containers can be landfilled after have been emptied as thoroughly as possible, when in compliance with the Environmental Protection Regulation and with local, state and federal regulations.

13.1.2 Waste treatment-relevant information: Avoid losses to the environment

13.1.3 Sewage disposal-relevant information: Do not allow to enter ground soil, sewage, drains.

13.1.4 Other disposal recommendations: No data available

SECTION 14. Transport information

No dangerous good in sense of these transport regulations:

Land transport (ADR/RID); Inland waterway transport (ADN); Sea transport (IMDG); Air transport (ICAO-TI / IATA-DGR); USA Department of Transport (DOT); Canada Transportation of Dangerous Goods (TDG).

14.1. UN number : None.

14.2. UN proper shipping name: Not applicable.

14.3. Transport hazard class(es) : Not applicable.

14.4. Packing group: Not applicable.

14.5. Environmental hazards: No.

14.6. Special precautions for user: Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code": Not applicable.

SECTION 15. Regulation information

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

European Union

REACH

The substance "short tangled multi-walled carbon nanotubes obtained by catalytic chemical vapour deposition" (MWCNT) has been registered under REACH (RRN: 01-2119879048-26-0001). The substance as registered had no corresponding CAS number. The European Agency ECHA has however assigned the provisional EC List Number 936-414-1. The MWCNT compounded in this product is NC7000™.

The substance(s) in this product has (have) been Registered or are exempted from registration according to Regulation (EC) REACH 1907/2006.

United States of America

Toxic Substance Control Act

All substances in this product are listed/exempted in the TSCA inventory.

This product contains one or more substance(s) which is/are subject to a TSCA Section 5(e) consent order that imposes certain restrictions on handling, storage, distribution, use and disposal. Contact Nanocyl S.A. for details.

Canada

In Canada, since a component of this product is not listed on the Canadian Domestic Substance List (DSL) or non-Domestic Substances List (NDSL), schedule 5 of the New Substances Notification Regulations (Chemicals and Polymers) of the Canadian Environmental Protection Act, 1999, have been granted.

Inventories

All components of this product are compliant with the following chemical inventories: Japanese Existing and New Chemical Substance (ENCS), Korean Existing Chemical Substance (ECL), Philippines Inventory of Chemicals and Chemical Substances (PICCS), Chinese Chemical Inventory of Existing Chemical Substance (IECS) and Taiwan Existing Chemical Substance Nomination (ECN).

15.2 Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out for this mixture by the supplier. A Chemical Safety Assessment is not required as product is not classified as hazardous.

SECTION 16. Other information

Voluntary safety information following the Safety Data Sheet format according to Regulation (EC) No. 1907/2006 (REACH).

The contents and format of this SDS are in accordance with OSHA GHS Regulation 29 CFR 1910.1200 and its amendments

Abbreviations and acronyms:

EC	European Commission
CLP	Classification Labelling and Packaging
CFR	Code of Federal Regulations
GHS	Globally Harmonized System
HCS	Hazard Communication Standard
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
SDS	Safety Data Sheet

Vertical lines in the left hand margin indicate an amendment from the previous version.

Safety Data Sheet revision history:

Previous version:	15 February 2017	(V02)
Current version:	29 September 2020	(V03)

Disclaimer:

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