

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 01.12.2023

Version number 4 (replaces version 3)

Revision: 01.12.2023

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier****Trade name:****GRADIA DIRECT Flo**

Nanoform

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

No further relevant information available.

Application of the substance / the mixture Auxiliary for dental technology

1.3 Details of the supplier of the safety data sheet**Manufacturer/Supplier:**

GC EUROPE N.V.

Interleuvenlaan 33

B-3001 Leuven

Tel. +32/(0)16/74.10.00

Fax +32/(0)16/40.26.84

msds@gc.dental

Information department: Regulatory affairs**1.4 Emergency telephone number:** International: +01-813-248-0585 (ChemTel Inc.)**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Skin Sens. 1 H317 May cause an allergic skin reaction.

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labeled according to the CLP regulation.

Exemptions

The product, regulated as an invasive medical device by the Regulation (EC) 2017/745, is exempted from labelling requirements for substances and mixtures (according to the provision of the Art 1.5).

Hazard pictograms

GHS07 GHS09

Signal word Warning**Hazard-determining components of labeling:**

Urethane Dimethacrylate (UDMA)

2,2'-ethylenedioxydiethyl dimethacrylate

2-(2H-benzotriazol-2-yl)-p-cresol

Hazard statements

H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

(Contd. on page 2)

Safety data sheet

according to 1907/2006/EC, Article 31

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Version number 4 (replaces version 3)

Revision: 01.12.2023

Trade name: GRADIA_DIRECT_Flo

(Contd. of page 1)

- **Precautionary statements**

- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterization: Mixtures**

- **Description:**

Only substances required to be mentioned according to Annex II of regulation 1907/2006 are listed. Information on the other substances that may be present can be obtained upon request.

- **Dangerous components:**

72869-86-4	Urethane Dimethacrylate (UDMA) Aquatic Chronic 2, H411; Skin Sens. 1B, H317	25-<50%
109-16-0	2,2'-ethylenedioxydiethyl dimethacrylate Skin Sens. 1, H317	5-<10%
68611-44-9	Silane, dichlorodimethyl-, reaction products with silica	2.5-<5%
13463-67-7	titanium dioxide Carc. 2, H351	0.5-<1%
1879-09-0	6-tert-butyl-2,4-xylenol Acute Tox. 2, H310; STOT RE 2, H373; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	≥0.25-<0.5%
2440-22-4	2-(2H-benzotriazol-2-yl)-p-cresol Acute Tox. 3, H331; Aquatic Chronic 1, H410; Skin Sens. 1, H317	≥0.25-<0.5%
7631-86-9	silicon dioxide	0.2-<0.5%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.
If symptoms persist consult doctor.

- **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
Take affected persons into fresh air and keep quiet.

- **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.
Seek medical treatment.
If skin irritation continues, consult a doctor.

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

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Version number 4 (replaces version 3)

Revision: 01.12.2023

Trade name: GRADIA_DIRECT_Flo

(Contd. of page 2)

- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
*Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.*
- **4.2 Most important symptoms and effects, both acute and delayed** *Allergic reactions*
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** *CO₂, sand, extinguishing powder. Do not use water.*
- **For safety reasons unsuitable extinguishing agents:** *Water*
- **5.2 Special hazards arising from the substance or mixture**
*Formation of toxic gases is possible during heating or in case of fire.
No further relevant information available.*
- **5.3 Advice for firefighters**
- **Protective equipment:** *Wear self-contained respiratory protective device.*
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
*Remove persons from danger area.
Avoid formation of dust.
Avoid contact with the eyes and skin.
Wear protective clothing.*
- **6.2 Environmental precautions:**
*Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to penetrate the ground/soil.
In case of seepage into the ground inform responsible authorities.*
- **6.3 Methods and material for containment and cleaning up:**
*Pick up mechanically.
Prevent formation of dust.
Dispose of the collected material according to regulations.*
- **6.4 Reference to other sections**
*See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.*

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
*Ensure good ventilation/exhaustion at the workplace.
Prevent formation of dust.
Any deposit of dust which cannot be avoided must be regularly removed.
Avoid contact with the eyes and skin.*

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 01.12.2023

Version number 4 (replaces version 3)

Revision: 01.12.2023

Trade name: GRADIA_DIRECT_Flo

(Contd. of page 3)

- **Information about protection against explosions and fires:**
Protect against electrostatic charges.
Dust can combine with air to form an explosive mixture.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in unopened original receptacles.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** None.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- **DNELs**

13463-67-7 titanium dioxide		
Inhalative	DNEL inhalation	10 mg/m ³ (man)
1879-09-0 6-tert-butyl-2,4-xylenol		
Inhalative	DNEL inhalation	0.14 mg/m ³ (man)

- **Additional information:** The lists that were valid during the creation were used as basis.

- **8.2 Exposure controls**
- **Additional information about design of technical systems:** No further data; see section 7.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Do not inhale dust / smoke / mist.
Avoid contact with the eyes and skin.
Wash hands before breaks and at the end of work.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
- **Breathing equipment:** Suitable respiratory protective device recommended.
- **Protection of hands:**



Protective gloves

- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 01.12.2023

Version number 4 (replaces version 3)

Revision: 01.12.2023

Trade name: GRADIA_DIRECT_Flo

(Contd. of page 4)

· Eye protection:



Tightly sealed goggles

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Physical state	Solid
· Color:	Various colors
· Odor:	Characteristic
· Odor threshold:	Not determined.
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	Undetermined.
· Flammability (solid, gaseous):	Not determined.
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Flash point:	Not applicable.
· Auto igniting:	Undetermined.
· Decomposition temperature:	Not determined.
· pH-value:	Not applicable.
· Viscosity:	
· Kinematic:	Not applicable.
· Dynamic:	Not applicable.
· Solubility in / Miscibility with	
· Water:	Insoluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Vapor pressure:	Not applicable.
· Density and/or relative density	
· Density:	Not determined.
· Relative density	Not determined.

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 01.12.2023

Version number 4 (replaces version 3)

Revision: 01.12.2023

Trade name: GRADIA_DIRECT_Flo

(Contd. of page 6)

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.

· **LD/LC50 values that are relevant for classification:**

72869-86-4 Urethane Dimethacrylate (UDMA)

Oral	LD50	>5,000 mg/kg (rat female) (OECD 401)
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13463-67-7 titanium dioxide

Oral	LD50	>5,000 mg/kg (mouse) (OECD 420)
Inhalative	LC50/4 h	>6.82 mg/l (rat male)

1879-09-0 6-tert-butyl-2,4-xylenol

Oral	LD50	910 mg/kg (rat (f+m)) (OECD 401)
Dermal	LD50	<200 mg/kg (rabbit) (OECD 402)

2440-22-4 2-(2H-benzotriazol-2-yl)-p-cresol

Oral	LD50	10,000 mg/kg (rat (f+m))
Inhalative	LC50/4 h	0.59 mg/l (rat (f+m))

7631-86-9 silicon dioxide

Oral	LD50	10,000 mg/kg (rat (f+m))
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- **on the skin:** Based on available data, the classification criteria are not met.
- **on the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** May cause an allergic skin reaction.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **Specific target organ toxicity - single exposure** Based on available data, the classification criteria are not met.
- **Specific target organ toxicity - repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

· **Additional toxicological information:**

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

- **Repeated dose toxicity** No further relevant information available.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
No further relevant information available.

(Contd. on page 8)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 01.12.2023

Version number 4 (replaces version 3)

Revision: 01.12.2023

Trade name: GRADIA_DIRECT_Flo

(Contd. of page 7)

· 11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

72869-86-4 Urethane Dimethacrylate (UDMA)

EC50/48h (static) >1.2 mg/l (daphnia magna) (OECD 202)

· 12.2 Persistence and degradability No further relevant information available.

· 12.3 Bioaccumulative potential No further relevant information available.

· 12.4 Mobility in soil No further relevant information available.

· 12.5 Results of PBT and vPvB assessment

· PBT: Not applicable.

· vPvB: Not applicable.

· 12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

· 12.7 Other adverse effects

· Additional ecological information:

· General notes:

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

SECTION 13: Disposal considerations

· 13.1 Waste treatment methods

· Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· European waste catalogue

18 00 00	WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (EXCEPT KITCHEN AND RESTAURANT WASTES NOT ARISING FROM IMMEDIATE HEALTH CARE)
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18 01 00	wastes from natal care, diagnosis, treatment or prevention of disease in humans
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18 01 06*	chemicals consisting of or containing hazardous substances
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· Uncleaned packagings:

· Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number

· ADR, IMDG, IATA

UN3077

(Contd. on page 9)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 01.12.2023

Version number 4 (replaces version 3)

Revision: 01.12.2023

Trade name: GRADIA_DIRECT_Flo

(Contd. of page 8)

· **14.2 UN proper shipping name**
 · **DOT** not regulated
 · **ADR** 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Urethane Dimethacrylate (UDMA), 6-tert-butyl-2,4-xyleneol)
 · **IMDG** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Urethane Dimethacrylate (UDMA), 6-tert-butyl-2,4-xyleneol), MARINE POLLUTANT
 · **IATA** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Urethane Dimethacrylate (UDMA), 6-tert-butyl-2,4-xyleneol)

· **14.3 Transport hazard class(es)**· **ADR**

· **Class** 9 (M7) Miscellaneous dangerous substances and articles
 · **Label** 9

· **IMDG, IATA**

· **Class** 9 Miscellaneous dangerous substances and articles
 · **Label** 9

· **14.4 Packing group**· **ADR, IMDG, IATA**

III

· **14.5 Environmental hazards:**· **Marine pollutant:**

No
 Symbol (fish and tree)

· **Special marking (ADR):**

Symbol (fish and tree)

· **Special marking (IATA):**

Symbol (fish and tree)

· **14.6 Special precautions for user**

Warning: Miscellaneous dangerous substances and articles

· **Hazard identification number (Kemler code):**

90

· **EMS Number:**

F-A,S-F

· **Stowage Category**

A

· **Stowage Code**

SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.

· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **ADR**· **Limited quantities (LQ)**

5 kg

(Contd. on page 10)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 01.12.2023

Version number 4 (replaces version 3)

Revision: 01.12.2023

Trade name: GRADIA_DIRECT_Flo

(Contd. of page 9)

· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· Transport category	3
· Tunnel restriction code	(-)
<hr/>	
· IMDG	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· UN "Model Regulation":	UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (URETHANE DIMETHACRYLATE (UDMA), 6-TERT-BUTYL-2,4-XYLENOL), 9, III

SECTION 15: Regulatory information

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

· **Section 355 (extremely hazardous substances):**

None of the ingredient is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

13463-67-7 titanium dioxide

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

1309-37-1	Iron(III)oxide	A4
13463-67-7	titanium dioxide	A4

· **MAK (German Maximum Workplace Concentration)**

13463-67-7	titanium dioxide	3A
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· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

13463-67-7	titanium dioxide	
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· **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** None of the ingredients is listed.

(Contd. on page 11)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 01.12.2023

Version number 4 (replaces version 3)

Revision: 01.12.2023

Trade name: GRADIA_DIRECT_Flo

(Contd. of page 10)

- **Seveso category E2 Hazardous to the Aquatic Environment**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t**
- **Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t**

· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

SECTION 16: Other information

· **Relevant phrases**

- H302 Harmful if swallowed.
- H310 Fatal in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.
- H351 Suspected of causing cancer.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.

· **Classification according to Regulation (EC) No 1272/2008 Calculation method**

· **Department issuing SDS: Regulatory affairs**

· **Contact: msds@gc.dental**

· **Date of previous version 28.06.2023**

· **Version number of previous version: 3**

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

(Contd. on page 12)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 01.12.2023

Version number 4 (replaces version 3)

Revision: 01.12.2023

Trade name: GRADIA_DIRECT_Flo

(Contd. of page 11)

vPvB: very Persistent and very Bioaccumulative
 NIOSH: National Institute for Occupational Safety
 OSHA: Occupational Safety & Health
 Acute Tox. 4: Acute toxicity – Category 4
 Acute Tox. 2: Acute toxicity – Category 2
 Acute Tox. 3: Acute toxicity – Category 3
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Skin Sens. 1: Skin sensitisation – Category 1
 Skin Sens. 1B: Skin sensitisation – Category 1B
 Carc. 2: Carcinogenicity – Category 2
 STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
 Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
 Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

· **Sources**

- ECHA (<http://echa.europa.eu/>)
- EnviChem (www.echemportal.org)

· * **Data compared to the previous version altered.**

This version replaces all previous versions.

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