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

Printing date 25.07.2023

Version number 2 (replaces version 1)

Revision: 25.07.2023

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

· 1.1 Product identifier

• Trade name: <u>GRADIA_PLUS_GUM_LB</u>

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 3 H412 Harmful 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



· Signal word Warning

· Hazard-determining components of labeling:

- Urethane Dimethacrylate (UDMA)
- $2,2'-ethylenedioxydiethyl\ dimethacrylate$
- $2\hbox{-}(2H\hbox{-}benzotriazol\hbox{-}2-yl)\hbox{-}p\hbox{-}cresol$
- · Hazard statements

H317 May cause an allergic skin reaction. H412 Harmful to aquatic life with long lasting effects.

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(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. · Determination of endocrine-disrupting properties 128-37-0 Butylated hydroxytoluene List II

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	•	10 0 00 /
41637-38-1	Esterification products of 4,4'-isopropylidenediphenol, ethoxylated and 2-	10-<25%
	methylprop-2-enoic acid.	
	Aquatic Chronic 4, H413	
72869-86-4	Urethane Dimethacrylate (UDMA)	5-<10%
	Aquatic Chronic 2, H411; Skin Sens. 1B, H317	
109-16-0	2,2'-ethylenedioxydiethyl dimethacrylate	2.5-<5%
	Skin Sens. 1, H317	
13463-67-7	titanium dioxide	0.5-<1%
	Carc. 2, H351	
68611-44-9	Silane, dichlorodimethyl-, reaction products with silica	1-<2.5%
128-37-0	Butylated hydroxytoluene	≥0.25-<0.5%
	Aquatic Acute 1, H400; Aquatic Chronic 1, H410	
	(II)	
1879-09-0	6-tert-butyl-2,4-xylenol	≥0.25-<0.5%
	Acute Tox. 2, H310; STOT RE 2, H373; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	
2440-22-4	2-(2H-benzotriazol-2-yl)-p-cresol	≥0.25-<0.5%
	Acute Tox. 3, H331; Aquatic Chronic 1, H410; Skin Sens. 1, H317	
75980-60-8	diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	0.2-<0.5%
	Repr. 2, H361f	
· Additional i	nformation: For the wording of the listed hazard phrases refer to section 16.	

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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.

· 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

- \cdot 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, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Use fire fighting measures that suit the environment.

- · For safety reasons unsuitable extinguishing agents: Water with full jet
- 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 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: Absorb liquid components with liquid-binding material. Dispose of the collected material according to regulations.

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· 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 aerosols. Avoid contact with the eyes and skin.

· Information about protection against explosions and fires: No special measures required.

· 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

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/m3 (man)

128-37-0 Butylated hydroxytoluene

Dermal DNEL dermal 0.5 mg/kg bw/day (man)

Inhalative DNEL inhalation 3.5 mg/m3 (man)

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

Inhalative DNEL inhalation 0.14 mg/m3 (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.

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.

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• 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.

• Eye protection:



Tightly sealed goggles

SECTION 9: Physical and chemical properties

General Information	Fluid	
Physical state Color:	1 10000	
	According to product specification	
Odor:	Odorless	
Odor threshold:	Not determined.	
Melting point/Melting range:	Undetermined.	
Boiling point/Boiling range:	190 °C	
Flammability (solid, gaseous):	Not applicable.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Flash point:	>150 °C	
Auto igniting:	Undetermined.	
Decomposition temperature:	Not determined.	
pH-value:	Not determined.	
Viscosity:		
Kinematic:	Not determined.	
Dynamic:	Not determined.	
Solubility in / Miscibility with		
Water:	Insoluble.	
Partition coefficient (n-octanol/water):	Not determined.	
Vapor pressure:	Not determined.	
Density and/or relative density		
Density at 20 °C:	$2 g/cm^3$	
Relative density	Not determined.	

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Vapor density	Not determined.
Particle characteristics	SiO2: Diameter particle structure = $2.5 - 50$ nm (TEM)
	d50, number-based)
	Diameter agglomerate $= 5 - 50$ mm (laser diffraction di
	module, d50, volume based)
	68611-44-9 Silane, dichlorodimethyl-, reaction produc
	with silica: Spheroidal, amorphous nanoform, s
	including amorphous nanoforms, amorphous form
	surface-treated nanoforms
9.2 Other information	
Appearance:	
Form:	Pasty
Important information on protection of hea	ilth and
environment, and on safety.	
Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Solvent content:	
VOC (EC)	$0.0 \ g/l$
Change in condition	
Evaporation rate	Not determined.
Information with regard to physical hazard cla	
Explosives	Void
Flammable gases	Void
Aerosols	Void
Oxidising gases	Void
Gases under pressure	Void
Flammable liquids	Void
Flammable solids	Void
Self-reactive substances and mixtures	Void
Pyrophoric liquids	Void
Pyrophoric solids	Void
Self-heating substances and mixtures	Void
Substances and mixtures, which emit flammab	0
in contact with water	Void
Oxidising liquids	Void
Oxidising solids	Void
Organic peroxides	Void
Corrosive to metals	Void Void
Desensitised explosives	Void

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.

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· 10.6 Hazardous decomposition products: No dangerous decomposition products known.

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	•	d on available data, the classification criteria are not met.	
		at are relevant for classification:	
		ne Dimethacrylate (UDMA)	
Oral	LD50 -7 titanium	>5,000 mg/kg (rat female) (OECD 401)	
	-7 titanium $LD50$		
Oral	2200	>5,000 mg/kg (mouse) (OECD 420)	
		a > 6.82 mg/l (rat male)	
	•	hydroxytoluene	
Oral	LD50	>6,000 mg/kg (rat (f+m)) (OECD 401)	
		tyl-2,4-xylenol	
Oral	LD50	910 mg/kg (rat (f+m)) (OECD 401)	
Dermal	LD50	<200 mg/kg (rabbit) (OECD 402)	
		nzotriazol-2-yl)-p-cresol	
Oral	LD50	10,000 mg/kg (rat (f+m))	
		h = 0.59 mg/l (rat (f+m))	
		on available data, the classification criteria are not met.	
		n available data, the classification criteria are not met.	
		cause an allergic skin reaction. i city Based on available data, the classification criteria are not met.	
		sed on available data, the classification criteria are not met.	
		ty Based on available data, the classification criteria are not met.	
Specific t Aspiratio Additiond	arget organ n hazard B 11 toxicolog	n toxicity - single exposure Based on available data, the classification criteria are not in toxicity - repeated exposure Based on available data, the classification criteria are not Based on available data, the classification criteria are not glased on available data, the classification criteria are not met.	
	· -	tional Safety & Health Administration)	
÷	0	ents is listed.	
	e <mark>cts (carcin</mark> r relevant i	ity No further relevant information available. 10genity, mutagenicity and toxicity for reproduction) information available. 1 other hazards	
No furthe	rmation on		
No furthe 11.2 Info		g properties	

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)

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128-37-0 Butylated hydroxytoluene

EC50/48h (static) 0.48 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 For information on endocrine disrupting properties see section 11.

· 12.7 Other adverse effects

· Remark: Harmful to fish

• 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.

Harmful to aquatic organisms

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)
18 01 00 wastes from natal care, diagnosis, treatment or prevention of disease in humans
18 01 06* chemicals consisting of or containing hazardous substances

18 01 06* chemicals consisting of or containing hazardous substances

· Uncleaned packagings:

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

14.1 UN-Number		
ADR, ADN, IMDG, IATA	not regulated	
14.2 UN proper shipping name DOT, ADR, ADN, IMDG, IATA	not regulated	
14.3 Transport hazard class(es)		
ADR, ADN, IMDG, IATA		
Class	not regulated	
14.4 Packing group		
ADR, IMDG, IATA	not regulated	
14.5 Environmental hazards:		
Marine pollutant:	No	

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· 14.6 Special precautions for user	Not applicable.				
· 14.7 Transport in bulk according to Annex II of					
MARPOL73/78 and the IBC Code	Not applicable.				
· UN "Model Regulation":	not regulated				

SECTION 15: Regulatory information

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

13463-67-7 titanium dioxide

128-37-0 Butylated hydroxytoluene

· MAK (German Maximum Workplace Concentration)

13463-67-7 titanium dioxide

128-37-0 Butylated hydroxytoluene

·NIOSH-Ca (National Institute for Occupational Safety and Health)

13463-67-7 titanium dioxide

· Directive 2012/18/EU

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

• REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

• 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.

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· 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.

H361f Suspected of damaging fertility.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H411 Toxic to aquatic life with long lasting effects.

H413 May cause long lasting harmful effects to aquatic life.

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

- · Department issuing SDS: Regulatory affairs
- · Contact: msds@gc.dental
- · Date of previous version 25.07.2023
- Version number of previous version: 1
- 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

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)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health

Acute Tox. 4: Acute toxicity – Category 4

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(Contd. of page 10) 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 Repr. 2: Reproductive toxicity – Category 2 STOT RE 2: Specific target organ toxicity (repeated exposure) - Category 2 Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1 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 Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard - Category 3 Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard - Category 4 Sources • ECHA (http://echa.europa.eu/) • EnviChem (www.echemportal.org) • * Data compared to the previous version altered. This version replaces all previous versions. Disclaimer: The information contained herein is believed to be true and accurate. However, all statements, recommendations or suggestions are made without any guarantee, representation or warranty, express or implied, on our part. Therefore, no warranty is made or to be implied that the information set out in this document is accurate or complete, and we accordingly exclude all liability in connection with the use of this information or the products referred to herein. All such risks are assumed by the purchaser/user. The information contained herein is also subject to change without notice. For the avoidance of doubt, however, nothing in this document excludes or limits our liability for death or personal injury caused by our negligence or for fraudulent misrepresentation.