

Printing date 24.08.2023 Version number 4 (replaces version 3) Revision: 24.08.2023

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

- · 1.1 Product identifier
- · Trade name: GRADIA Margin Opaque-Foundation Opaque
- · 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 Auxillary 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

- · Further information obtainable from: Regulatory affairs
- · 1.4 Emergency telephone number:

National poison center for United Kingdom of Great Britain and Northern Ireland:

Belfast: +44 28 90 63 2032 Birmingham: +44 121 507 4123 Edinburgh: +44 131 242 1383

Newcastle Upon Tyne: +44 191 2606182/+44 191 2606180

Penarth: +44 292 071 55 54

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 labelled according to the GB 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 labelling:

Urethane Dimethacrylate (UDMA)

2,2'-ethylenedioxydiethyl dimethacrylate

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· Hazard statements

H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

· Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P272 Contaminated work clothing should 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 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:		
CAS: 72869-86-4 EINECS: 276-957-5	Urethane Dimethacrylate (UDMA) Aquatic Chronic 2, H411; Skin Sens. 1B, H317	25-<50%
CAS: 109-16-0 EINECS: 203-652-6	2,2'-ethylenedioxydiethyl dimethacrylate Skin Sens. 1, H317	10-<25%
CAS: 7631-86-9 EINECS: 231-545-4	silicon dioxide Nanoform: Spheroidal, amorphous nanoform, set including amorphous nanoforms, amorphous forms, non-surface-treated nanoforms	5-<10%
CAS: 68611-44-9 EINECS: 271-893-4	Silane, dichlorodimethyl-, reaction products with silica Nanoform: Spheroidal, amorphous nanoform, set including amorphous nanoforms, amorphous forms, surface-treated nanoforms	5-<10%
CAS: 3290-92-4 EINECS: 221-950-4	Propylidynetrimethyl trimethacrylate Aquatic Chronic 2, H411	2.5-<5%
CAS: 13463-67-7 EINECS: 236-675-5 Index number: 022-006-00-2	titanium dioxide Carc. 2, H351 substance with a Community workplace exposure limit	2.5-<5%
CAS: 1985-51-9 EINECS: 217-856-8	2,2-dimethyl-1,3-propanediyl bismethacrylate Skin Irrit. 2, H315; Eye Irrit. 2, H319	2.5-<5%
CAS: 78-67-1 EINECS: 201-132-3 Index number: 608-019-00-1	2,2'-dimethyl-2,2'-azodipropiononitrile Self-react. C, H242; Acute Tox. 4, H302; Acute Tox. 4, H332; Aquatic Chronic 3, H412	1-<2.5%
CAS: 128-37-0 EINECS: 204-881-4	Butylated hydroxytoluene Aquatic Acute I, H400; Aquatic Chronic I, H410 Substance identified as having endocrine disrupting properties (II)	1-<2.5%
CAS: 1309-37-1 EINECS: 215-168-2	Iron(III)oxide substance with a Community workplace exposure limit	0.5-<1%

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· 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.

· After eve 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, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Use fire extinguishing methods suitable to surrounding conditions.

- · 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.

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· 6.3 Methods and material for containment and cleaning up:

Absorb liquid components with liquid-binding material.

Dispose of the material collected 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 aerosols.

Avoid contact with the eyes and skin.

- · Information about fire and explosion protection: 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

Ingredients with limit values that require monitoring at the workplace:		
13463-67-7 titanium dioxide		
WEL Long-term value: 10* 4** mg/m³ *total inhalable **respirable		
1309-37-1 Iron(III)oxide		
WEL Short-term value: $10* \text{ mg/m}^3$ Long-term value: $5* 10** 4*** \text{ mg/m}^3$ *fume (as Fe), **total respirable, ***respirable		
· DNELs		
13463-67-7 titanium dioxide		
Inhalative DNEL inhalation 10 mg/m3 (man)		
78-67-1 2,2'-dimethyl-2,2'-azodipropiononitrile		
Dermal DNEL dermal 97 mg/kg bw/day (man)		

128	-37-0	Butylate	d hy	droxy	toluen	e
Ъ	1	DATE	1	1	0.5	

Dermal	DNEL dermal	0.5 mg/kg bw/day (man)
Inhalative	DNEL inhalation	3.5 mg/m3 (man)

Inhalative DNEL inhalation 0.07 mg/m3 (man)

· PNECs

3290-92-4 Propylidynetrimethyl trimethacrylate

PNEC Aqua	2.76 μg/L (freshwater)
	20 ug/L (intermittent releases)

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0.276 µg/L (marine water) PNEC STP 10 mg/L (Sewage Treatment Plants) PNEC Sediment 0.4951 mg/kg sed dw (freshwater) 0.04951 mg/kg sed dw (marine water) PNEC Air mg/L (air) PNEC Soil 0.0974 mg/kg soil dw (soil) PNEC Predator | mg/kg (Predator)

- · Additional information: The lists valid during the making were used as basis.
- · 8.2 Exposure controls
- · Appropriate engineering controls No further data; see section 7.
- · Individual protection measures, such as personal protective equipment
- General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Avoid contact with the eyes and skin.

Wash hands before breaks and at the end of work.

Immediately remove all soiled and contaminated clothing

- **Respiratory protection:** Suitable respiratory protective device recommended.
- · Hand protection



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/face protection



Tightly sealed goggles

SECTION 9: Physical and chemical properties

- · 9.1 Information on basic physical and chemical properties
- · General Information

· Physical state Fluid · Colour: **Transparent** · Odour: Ester-like · Odour threshold: Not determined.

- · Melting point/freezing point: Undetermined. · Boiling point or initial boiling point and boiling range Undetermined.
- Flammability Not applicable.

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Lower and upper explosion limit	
Lower:	Not determined.
Upper:	Not determined.
Flash point:	Not applicable.
Auto-ignition temperature:	Undetermined.
Decomposition temperature:	Not determined.
pН	Not determined.
Viscosity:	
Kinematic viscosity	Not determined.
Dynamic:	Not determined.
Solubility	
water:	Insoluble.
Partition coefficient n-octanol/water (log value)	Not determined.
Vapour pressure:	Not determined.
Density and/or relative density	
Density:	Not determined.
Relative density	Not determined.
Vapour density	Not determined.
Particle characteristics	SiO2: Diameter particle structure = 2.5 - 50 nm (TEA
	d50, number-based)
	Diameter agglomerate $= 5 - 50$ mm (laser diffraction a
	module, d50, volume based)
	7631-86-9 silicon dioxide: Spheroidal, amorpho
	nanoform, set including amorphous nanoform
	amorphous forms, non-surface-treated nanoforms
	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 health a	
environment, and on safety.	nu -
Ignition temperature:	Product is not selfigniting.
Explosive properties:	Product does not present an explosion hazard.
Solvent content:	1. Counce does not present an empression muzum an
VOC (EC)	0.0~g/l
Change in condition	0.0 8/1
Evaporation rate	Not determined.
Liuporution ruic	1101 determined.
Information with regard to physical hazard classes	
Explosives	Void
Explosives Flammable gases	Void
Explosives Flammable gases Aerosols	Void Void
Explosives Flammable gases Aerosols Oxidising gases	Void Void Void
Explosives Flammable gases Aerosols	Void Void Void Void
Explosives Flammable gases Aerosols Oxidising gases Gases under pressure Flammable liquids	Void Void Void Void Void
Explosives Flammable gases Aerosols Oxidising gases Gases under pressure	Void Void Void Void
Explosives Flammable gases Aerosols Oxidising gases Gases under pressure Flammable liquids	Void Void Void Void Void
Explosives Flammable gases Aerosols Oxidising gases Gases under pressure Flammable liquids Flammable solids	Void Void Void Void Void Void

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Self-heating substances and mixtures
 Substances and mixtures, which emit flammable gases in contact with water
 Oxidising liquids
 Oxidising solids
 Organic peroxides
 Corrosive to metals

SECTION 10: Stability and reactivity

- · 10.1 Reactivity No further relevant information available.
- · 10.2 Chemical stability

· Desensitised explosives

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Void

- · 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 hazard classes as defined in Regulation (EC) No 1272/2008
- · Acute toxicity Based on available data, the classification criteria are not met.

· LD/LC50 1	· LD/LC50 values relevant for classification:		
72869-86-4	72869-86-4 Urethane Dimethacrylate (UDMA)		
Oral	LD50	>5,000 mg/kg (rat female) (OECD 401)	
7631-86-9	7631-86-9 silicon dioxide		
Oral	LD50	10,000 mg/kg (rat (f+m))	
13463-67-	13463-67-7 titanium dioxide		
Oral	LD50	>5,000 mg/kg (mouse) (OECD 420)	
Inhalative	LC50/4 h	>6.82 mg/l (rat male)	
78-67-1 2,2	2'-dimethy	l-2,2'-azodipropiononitrile	
Oral	LD50	700 mg/kg (mus)	
128-37-0 E	128-37-0 Butylated hydroxytoluene		
Oral	LD50	>6,000 mg/kg (rat (f+m)) (OECD 401)	
1309-37-1	Iron(III)o	xide	
Oral	LD50	>5,000 mg/kg (rat (f+m))	
D		*** ** 16 11 : 1:	

- · Respiratory or skin sensitisation May cause an allergic skin reaction.
- · Additional toxicological information:
- · Repeated dose toxicity No further relevant information available.
- · CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
 No further relevant information available.

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· 11.2 Information on other hazards

· Endocrine disrupting properties

128-37-0 Butylated hydroxytoluene

List II

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:		
72869-86-4 Urethan	e Dimethacrylate (UDMA)	
EC50/48h (static)	>1.2 mg/l (daphnia magna) (OECD 202)	
3290-92-4 Propylidy	netrimethyl trimethacrylate	
LC50/96h (dynamic)	>1 mg/L (Oncorhvnchus mykiss) (OECD Guideline 203 (Fish, Acute Toxicity Test))	
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
- Additional ecological information:
- · General notes:

Water hazard class 3 (German Regulation) (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 together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packaging:
- **Recommendation:** Disposal must be made according to official regulations.

· 14.1 UN number or ID number	
· ADR, IMDG, IATA	UN3082
· 14.2 UN proper shipping name	
$\cdot ADR$	3082 ENVIRONMENTALLY HAZARDOUS SUBSTANC
	LIQUID, N.O.S. (Urethane Dimethacrylate (UDMA
	Propylidynetrimethyl trimethacrylate)
· IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANC
	LIQUID, N.O.S. (Urethane Dimethacrylate (UDMA),

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IATA	Propylidynetrimethyl trimethacrylate), MARIN POLLUTANT ENVIRONMENTALLY HAZARDOUS SUBSTANC LIQUID, N.O.S. (Urethane Dimethacrylate (UDMA Propylidynetrimethyl trimethacrylate)
14.3 Transport hazard class(es)	
ADR	
M	
Class Label	9 (M6) Miscellaneous dangerous substances and articles. 9
IMDG, IATA	
Class Label	9 Miscellaneous dangerous substances and articles. 9
14.4 Packing group ADR, IMDG, IATA	III
14.5 Environmental hazards:	
Marine pollutant:	No
Special marking (ADR):	Symbol (fish and tree) Symbol (fish and tree)
Special marking (IATA):	Symbol (fish and tree)
14.6 Special precautions for user Hazard identification number (Kemler code): EMS Number: Stowage Category	Warning: Miscellaneous dangerous substances and articles 90 F-A,S-F A
14.7 Maritime transport in bulk according to IM instruments	10 Not applicable.
Transport/Additional information:	
ADR Limited quantities (LQ) Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml
Transport category Tunnel restriction code	Maximum net quantity per outer packaging: 1000 ml 3 (-)
IMDG Limited quantities (LQ)	5L

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· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (URETHANE DIMETHACRYLATE (UDMA), PROPYLIDYNETRIMETHYL TRIMETHACRYLATE), 9, III

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I None of the ingredients is listed.
- · 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
- · 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

- · Relevant phrases
- H242 Heating may cause a fire.
- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H351 Suspected of causing cancer.
- 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.
- H412 Harmful 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
- · 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

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)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (UK REACH)

PNEC: Predicted No-Effect Concentration (ÚK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Self-react. C: Self-reactive substances and mixtures – Type C/D

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Acute Tox. 4: Acute toxicity - Category 4

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

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

· 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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