SAFETY DATA SHEETS

This SDS packet was issued with item:

077086259

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

077086242

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

070215376 070483453 077083538

vivadeiii.

according to 1907/2006/EC, Article 31

Printing date 25.01.2011

Version number 9

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

· Product identifier

· Trade name: Monobond-S

- · Relevant identified uses of the substance or mixture and uses advised against
- · Application of the substance / the preparation Bonding agent
- · Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Ivoclar Vivadent AG

Bendererstrasse 2

FL-9494 Schaan

PRINCIPALITY OF LIECHTENSTEIN

Tel: +423 235 35 35 Fax: +423 235 33 60

· Further information obtainable from:

Regulatory Affairs

msds@ivoclarvivadent.com

· Emergency telephone number: +423 / 235 33 13

2 Hazards identification

- · Classification of the substance or mixture
- · Classification according to Directive 67/548/EEC or Directive 1999/45/EC

R10: Flammable.

· Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

· Classification system:

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- · Label elements
- · Labelling according to EU guidelines:

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· Risk phrases:

10 Flammable.

· Safety phrases:

7 Keep container tightly closed.

16 Keep away from sources of ignition - No smoking.

60 This material and its container must be disposed of as hazardous waste.

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description: Mixture of substances listed below with nonhazardous additions.

(Contd. on page 2)

Revision: 25.01.2011

-GB

Trade name: Monobond-S

· Dangerous components:					
CAS: 64-17-5 EINECS: 200-578-6	ethanol	F RII	50-100%		
CAS: 2530-85-0 EINECS: 219-785-8	3-trimethoxysilylpropyl methacrylate	Xi R36/37/38	≤ 2.5%		

4 First aid measures

- · Description of first aid measures
- · After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: Generally the product does not irritate the skin.
- · After eye contact: Rinse opened eye for several minutes under running water.
- · After swallowing: If symptoms persist consult doctor.
- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Firefighting measures

- · Extinguishing media
- · Suitable extinguishing agents:
- CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.
- · Additional information Cool endangered receptacles with water spray.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures
- Wear protective equipment. Keep unprotected persons away.
- · Environmental precautions:
- Dilute with plenty of water.
- Do not allow to enter sewers/ surface or ground water.
- · Methods and material for containment and cleaning up:
 - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- · 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.

7 Handling and storage

- · Handling:
- · Precautions for safe handling No special precautions are necessary if used correctly.
- · Information about fire and explosion protection:
- Keep ignition sources away Do not smoke.
- Protect against electrostatic charges.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- · Requirements to be met by storerooms and receptacles: No special requirements.

(Contd. on page 3)

Trade name: Monobond-S

· Information about storage in one common storage facility: Not required.

· Further information about storage conditions: Keep container tightly sealed.

· Specific end use(s) No further relevant information available.

(Contd. of page 2)

8 Exposure controls/personal protection

- · Additional information about design of technical facilities: No further data; see item 7.
- · Control parameters
- · Ingredients with limit values that require monitoring at the workplace:

64-17-5 ethanol

WEL () Long-term value: 1920 mg/m³, 1000 ppm

- · Additional information: The lists valid during the making were used as basis.
- · Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Usual hygienic measures for dental practice.

Wash hands before breaks and at the end of work.

- · Respiratory protection: Not required.
- · Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· 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

9 Physical and chemical properties

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

· Appearance:

Form: Colour: Fluid

Colour:

Colourless Alcohol-like

· Odour threshold:

Not determined.

· pH-value at 20°C:

4

· Change in condition

Melting point/Melting range: Boiling point/Boiling range: Undetermined.
Undetermined.

(Contd. on page 4)

Trade name: Monobond-S

	(Contd. of page
Flash point:	25°C
Ignition temperature:	425°C
Self-igniting:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
Explosion limits:	
Lower:	3.5 Vol %
Upper:	15.0 Vol %
· Vapour pressure at 20°C:	59 hPa
Density at 20°C:	0.913 g/cm^3
Relative density	Not determined.
· Vapour density	Not determined.
Evaporation rate	Not determined.
· Solubility in / Miscibility with	
water:	Soluble.
Segregation coefficient (n-octanol	/water): Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Other information	No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability Stable under normal handling and storage conditions.
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: None under normal conditions of storage and use.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritating effect.
- · Sensitization: No sensitizing effects known.

12 Ecological information

- · Toxicity
- · Acquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behaviour in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.

(Contd. on page 5)

(Contd. of page 4)

Trade name: Monobond-S

· Additional ecological information:

· General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation

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

· European waste catalogue

18 01 06* chemicals consisting of or containing dangerous substances

- · Uncleaned packaging:
- · Recommendation: Disposal must be made according to official regulations.
- · Recommended cleansing agents: Water, if necessary together with cleansing agents.

14 Transport information

· Land transport ADR/RID (cross-border)



· ADR/RID class: 3 (F1) Flammable liquids.

Danger code (Kemler): 30
UN-Number: 1170
Packaging group: III
Hazard label: 3

· UN proper shipping name: 1170 ETHANOL (ETHYL ALCOHOL), solution

· Tunnel restriction code D/E

· Maritime transport IMDG:



· IMDG Class: 3 · UN Number: 1170 · Label 3 · Packaging group: III · EMS Number: F-E,S-D

· Marine pollutant: No

· Proper shipping name: ETHANOL (ETHYL ALCOHOL), solution

(Contd. on page 6)

Trade name: Monobond-S

(Contd. of page 5)

· Air transport ICAO-TI and IATA-DGR:



· ICAO/IATA Class: 3 *· UN/ID Number:* 1170 *· Label* 3

· Packaging group: III

· Proper shipping name: ETHANOL, solution

· Special precautions for user Warning: Flammable liquids.

· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- · National regulations:
- · Other regulations, limitations and prohibitive regulations
 The product is a medical device according to the EC-directive 93/42/EEC.
- · Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases

R11 Highly flammable.

R36/37/38 Irritating to eyes, respiratory system and skin.

- GI



Printing date 12/11/2012 Version number 6 Reviewed on 12/11/2012

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

- · Product identifier
- · Trade name: Monobond Plus
- $\cdot \textit{Relevant identified uses of the substance or \textit{mixture and uses advised against}}$

No further relevant information available.

 $\cdot \ Application \ of \ the \ substance \ / \ the \ preparation$

Universal primer mediating a bond between metal, glass/oxid ceramics and resin

- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Ivoclar Vivadent Inc.

175 Pineview Drive, Amherst, N.Y. 14228

USA

Tel. +1 800 533 6825

Fax +1 716 691 2285

Ivoclar Vivadent Inc.

1-6600 Dixie Road

Mississauga, Ontario

L5T 2Y2

Canada

Phone: +1 905 670 8499 *Fax:* +1 905 670 3102

- · Information department: Quality Assurance / Regulatory Affairs
- · Emergency telephone number:

24 Hour Emergency Assistance:

Emergency-Call USA - Infotrac: 1-800-535-5053 Emergency-Call Canada - Canutec: 1-613-996-6666

General MSDS Assistance: US: 1-800-533-6825 Canada: 1-800-263-8182

2 Hazards identification

- · Classification of the substance or mixture
- · Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Irritant

May cause sensitisation by skin contact.

Highly flammable

Highly flammable.

Classification system:

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- · Label elements
- · Labelling according to EU guidelines:

Medical devices as defined in Directive 93/42/EEC and which are invasive or used in direct physical contact with the human body, are exempted from the provisions of Dangerous Substance Directive 1999/45/EWG usually if they are in the finished state and intended for the final user.

(Contd. on page 2)

– USA

Printing date 12/11/2012

Version number 6

Reviewed on 12/11/2012

Trade name: Monobond Plus

(Contd. of page 1)

· Code letter and hazard designation of product:





Irritant Highly flammable

· Hazard-determining components of labelling:

Methacrylated phosphoric acid ester

· Risk phrases:

Highly flammable.

May cause sensitisation by skin contact.

· Safety phrases:

Keep container tightly closed and in a well-ventilated place.

Keep away from sources of ignition - No smoking.

Do not breathe vapour/spray.

Avoid contact with skin.

Wear suitable gloves.

This material and its container must be disposed of as hazardous waste.

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 0Fire = 3Reactivity = 0

· HMIS-ratings (scale 0 - 4)



 \bigcirc Health = 0 Fire = 3

- · Other hazards
- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- · **Description:** Mixture of the substances listed below with nonhazardous additions.

· Dangerous	· Dangerous components:			
64-17-5	ethanol	50-100%		
2530-85-0	3-trimethoxysilylpropyl methacrylate	≤ 2.5%		
85590-00-7	Methacrylated phosphoric acid ester	≤ 2.5%		

4 First aid measures

- · Description of first aid measures
- · After inhalation:

Supply fresh air; consult doctor in case of complaints.

In case of unconsciousness place patient stably in side position for transportation.

(Contd. on page 3)

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Trade name: Monobond Plus

(Contd. of page 2)

- · After skin contact: Immediately rinse with water.
- · After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing: If symptoms persist consult doctor.
- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Firefighting measures

- · Extinguishing media
- · Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.
- · Additional information Cool endangered receptacles with water spray.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Not required.
- · Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- · Methods and material for containment and cleaning up: Pick up mechanically.
- · 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.

7 Handling and storage

- · Handling:
- · Precautions for safe handling

Only adequately trained personnel should handle this product.

For use in dentistry only.

- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage:
- Requirements to be met by storerooms and receptacles: Store only in the original receptacle.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Protect from exposure to the light.

Protect from heat and direct sunlight.

Keep receptacle tightly sealed.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

(Contd. on page 4)

- USA

Printing date 12/11/2012 Version number 6 Reviewed on 12/11/2012

Trade name: Monobond Plus

(Contd. of page 3)

· Control parameters

· Components	with	limit	values	that	reauire	monitoring	at the	worknlace:
Components	WULLE	unnu	raines	unu	require	monuoning	ui iii	workpiace.

64-17-5 ethanol

PEL 1900 mg/m³, 1000 ppm REL 1900 mg/m³, 1000 ppm

TLV Short-term value: 1880 mg/m³, 1000 ppm

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Usual hygienic measures for dental practice.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Keep away from foodstuffs, beverages and feed.

- · Breathing equipment: Not required.
- · Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· 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.

· Not suitable are gloves made of the following materials:

Commercial medical gloves do not provide protection against the sensitizing effect of methacrylates.

· Eye protection: Safety glasses

9 Physical and chemical properties

- · Information on basic physical and chemical properties
- · General Information
- · Appearance:

Form: Fluid
Color: Colorless

Odor: Alcohol-like
Odour threshold: Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range: $-114.5 \, ^{\circ}C \, (-174 \, ^{\circ}F)$

(Contd. on page 5)

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Trade name: Monobond Plus

	(Contd. of pag
Boiling point/Boiling range:	78 °C (172 °F)
Flash point:	13 °C (55 °F)
Ignition temperature:	425 °C (797 °F)
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	3.5 Vol %
Upper:	15 Vol %
Vapor pressure at 20 °C (68 °F):	59 hPa (44 mm Hg)
Density at 20 °C (68 °F):	0.794 g/cm³ (6.626 lbs/gal)
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Soluble.
Partition coefficient (n-octanol/wate	er): Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Other information	No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability Stable under normal handling and storage conditions.
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: None under normal conditions of storage and use.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- $\cdot \textit{LD/LC50} \textit{ values that are relevant for classification:} \\$

Oral LD50 >5000 mg/kg (rat)

- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritating effect.
- · Sensitization: Sensitization possible through skin contact.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

(Contd. on page 6)

Printing date 12/11/2012 Version number 6 Reviewed on 12/11/2012

Trade name: Monobond Plus

(Contd. of page 5)

- · Carcinogenic categories
- · NTP (National Toxicology Program)

None of the ingredients is listed.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- · **PBT**: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

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

- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

 $\cdot \textit{UN-Number}$

• **DOT** UN1170 • **ADR, IMDG, IATA** 1170

· UN proper shipping name

· **DOT**, **IATA** ETHANOL, solution

· ADR
1170 ETHANOL (ETHYL ALCOHOL), solution
• IMDG
ETHANOL (ETHYL ALCOHOL), solution

- · Transport hazard class(es)
- $\cdot DOT$



· Class 3 Flammable liquids.

(Contd. on page 7)

- USA

Printing date 12/11/2012 Version number 6 Reviewed on 12/11/2012

Trade name: Monobond Plus

		(Contd. of pag
Label	3	
ADR		
Class	3 (F1) Flammable liquids	
Label	3	
IMDG, IATA		
Class Label	3 Flammable liquids. 3	
Packing group		
DOT, ADR, IMDG, IATA	II	
Environmental hazards:		
Marine pollutant:	No	
Special precautions for user	Warning: Flammable liquids	
Danger code (Kemler):	33	
EMS Number:	F- E , S - D	
Transport in bulk according to Annex	II of	
MARPOL73/78 and the IBC Code	Not applicable.	

15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Sara
- · Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

64-17-5 ethanol

2530-85-0 3-trimethoxysilylpropyl methacrylate

- · Proposition 65
- · Chemicals known to cause cancer:

None of the ingredients is listed.

· 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.

(Contd. on page 8)

Printing date 12/11/2012 Version number 6 Reviewed on 12/11/2012

Trade name: Monobond Plus

(Contd. of page 7)

· Chemicals known to cause developmental toxicity:

64-17-5 ethanol

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

64-17-5 ethanol

A3

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

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Product related hazard informations:

Medical devices as defined in Directive 93/42/EEC and which are invasive or used in direct physical contact with the human body, are exempted from the provisions of Dangerous Substance Directive 1999/45/EWG usually if they are in the finished state and intended for the final user.

· Hazard symbols:





Irritant Highly flammable

· Hazard-determining components of labelling:

Methacrylated phosphoric acid ester

· Risk phrases:

Highly flammable.

May cause sensitisation by skin contact.

· Safety phrases:

Keep container tightly closed and in a well-ventilated place.

Keep away from sources of ignition - No smoking.

Do not breathe vapour/spray.

Avoid contact with skin.

Wear suitable gloves.

This material and its container must be disposed of as hazardous waste.

· National regulations:

· Other regulations, limitations and prohibitive regulations

The product is a medical device according to the EC-directive 93/42/EEC.

This product is classified as a medical device under US and Canadian regulations and has been reviewed by the US Food and Drug Administration and Health Canada.

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

* * Data compared to the previous version altered.

USA