

# DENTSPLY CALIBRA SILANE COUPLING AGENT

Chemwatch Independent Material Safety Data Sheet  
Issue Date: 6-Sep-2010  
C93177C

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Version No:5  
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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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### PRODUCT NAME

DENTSPLY CALIBRA SILANE COUPLING AGENT

### PROPER SHIPPING NAME

ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

### PRODUCT USE

- Used according to manufacturer's directions.

### SUPPLIER

Company: DENTSPLY (AUSTRALIA) PTY LTD

Address:

11 - 21 Gilby Road

Mount Waverley

VIC 3149

AUSTRALIA

Telephone: 1300 55 29 29

Emergency Tel: 1300 55 29 29 (Hours of operation:

Monday - Friday 9:00 am - 5:00 pm EST; General

information only)

Fax: +61 3 9538 8260

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## Section 2 - HAZARDS IDENTIFICATION

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### STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.

### POISONS SCHEDULE

None

### RISK

- Highly flammable.
- Irritating to eyes.
- Vapours may cause drowsiness and dizziness.

### SAFETY

- Use only in well ventilated areas.
- To clean the floor and all objects contaminated by this material use water and detergent.
- If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).
- This material and its container must be disposed of as hazardous waste.

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## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

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NAME	CAS RN	%
ethanol	64-17-5	92.6
acetone	67-64-1	7.4

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## Section 4 - FIRST AID MEASURES

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### SWALLOWED

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.

### EYE

- If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

- If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear.

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Section 4 - FIRST AID MEASURES

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

## INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

## NOTES TO PHYSICIAN

- For acute or short term repeated exposures to ethanol:
  - Acute ingestion in non-tolerant patients usually responds to supportive care with special attention to prevention of aspiration, replacement of fluid and correction of nutritional deficiencies (magnesium, thiamine pyridoxine, Vitamins C and K).
  - Give 50% dextrose (50-100 ml) IV to obtunded patients following blood draw for glucose determination.
  - Comatose patients should be treated with initial attention to airway, breathing, circulation and drugs of immediate importance (glucose, thiamine).
  - Decontamination is probably unnecessary more than 1 hour after a single observed ingestion. Cathartics and charcoal may be given but are probably not effective in single ingestions.

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.

### FIRE/EXPLOSION HAZARD

- Liquid and vapour are highly flammable.
  - Severe fire hazard when exposed to heat, flame and/or oxidisers.
  - Vapour may travel a considerable distance to source of ignition.
  - Heating may cause expansion or decomposition leading to violent rupture of containers.
- Combustion products include: carbon dioxide (CO<sub>2</sub>), other pyrolysis products typical of burning organic material.

### FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

### HAZCHEM

•2YE

### PERSONAL PROTECTION

Glasses:  
Chemical goggles.

Gloves:  
1.PE/EVAL/PE 2.BUTYL 3.NITRILE

Respirator:  
Type AX Filter of sufficient capacity

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.

### MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

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## Section 7 - HANDLING AND STORAGE

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### PROCEDURE FOR HANDLING

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.

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Section 7 - HANDLING AND STORAGE

- DO NOT allow clothing wet with material to stay in contact with skin.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

## SUITABLE CONTAINER

- Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.
- For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure.
- For materials with a viscosity of at least 2680 cSt. (23 deg. C)
- For manufactured product having a viscosity of at least 250 cSt. (23 deg. C)
- Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C).

## STORAGE INCOMPATIBILITY

- Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates.
- Avoid strong bases.

## STORAGE REQUIREMENTS

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- Keep containers securely sealed.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>
Australia Exposure Standards	ethanol (Ethyl alcohol)	1000	1880		
Australia Exposure Standards	acetone (Acetone)	500	1185	1000	2375

### PERSONAL PROTECTION

#### RESPIRATOR

Type AX Filter of sufficient capacity

#### EYE

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.
- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
  - frequency and duration of contact,
  - chemical resistance of glove material,
  - glove thickness and
  - dexterity.

#### OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.
- For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets), non sparking safety footwear.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

- For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Type of Contaminant: solvent, vapours, degreasing etc., evaporating from tank (in still air).	Air Speed: 0.25- 0.5 m/s (50- 100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5- 1 m/s (100- 200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1- 2.5 m/s (200- 500 f/min.)

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Clear, highly flammable liquid with an alcohol odour; mixes with water.

### PHYSICAL PROPERTIES

Mixes with water.

State	LIQUID	Molecular Weight	Not Applicable
Melting Range (°C)	- 114	Viscosity	Not Available
Boiling Range (°C)	78	Solubility in water (g/L)	Miscible
Flash Point (°C)	6 (TCC)	pH (1% solution)	Not Available
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not Available
Autoignition Temp (°C)	423	Vapour Pressure (kPa)	5.9
Upper Explosive Limit (%)	19	Specific Gravity (water=1)	0.8
Lower Explosive Limit (%)	3.3	Relative Vapour Density (air=1)	1.59
Volatile Component (%vol)	100	Evaporation Rate	Not Available
ethanol			
■ log Kow (Sangster 1997):		- 0.3	
acetone			
■ log Kow (Prager 1995):		- 0.24	
■ log Kow (Sangster 1997):		- 0.24	

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
  - Product is considered stable.
  - Hazardous polymerisation will not occur.
- For incompatible materials - refer to Section 7 - Handling and Storage.*

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

- Irritating to eyes.
- Vapours may cause dizziness or suffocation.
- Vapours may cause drowsiness and dizziness.

#### CHRONIC HEALTH EFFECTS

- Not applicable.

### TOXICITY AND IRRITATION

#### ACETONE:

#### ETHANOL:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

■ The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis.

#### ETHANOL:

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Section 11 - TOXICOLOGICAL INFORMATION

## TOXICITY

Oral (rat) LD50: 7060 mg/kg  
Oral (human) LDLo: 1400 mg/kg  
Oral (man) TDLo: 50 mg/kg  
Oral (man) TDLo: 1.40 mg/kg  
Oral (woman) TDLo: 256 mg/kg/12 wks  
Inhalation (rat) LC50: 20, 000 ppm/10h  
Inhalation (rat) LC50: 64000 ppm/4h

■ The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis.

## ACETONE:

### TOXICITY

Oral (man) TDLo: 2857 mg/kg  
Oral (rat) LD50: 5800 mg/kg  
Inhalation (human) TCLo: 500 ppm  
Inhalation (man) TCLo: 12000 ppm/4 hr  
Inhalation (man) TCLo: 10 mg/m<sup>3</sup>/6 hr  
Inhalation (rat) LC50: 50100 mg/m<sup>3</sup>/8 hr  
Dermal (rabbit) LD50: 20000 mg/kg

■ The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis.

for acetone:

The acute toxicity of acetone is low. Acetone is not a skin irritant or sensitiser but is a defatting agent to the skin.

## IRRITATION

Skin (rabbit):20 mg/24hr- Moderate  
Skin (rabbit):400 mg (open)- Mild  
Eye (rabbit):100mg/24hr- Moderate  
Eye (rabbit): 500 mg SEVERE

## IRRITATION

Eye (human): 500 ppm - Irritant  
Eye (rabbit): 3.95 mg - SEVERE  
Eye (rabbit): 20mg/24hr - Moderate  
Skin (rabbit):395mg (open) - Mild  
Skin (rabbit): 500 mg/24hr - Mild

## CARCINOGEN

Ethanol in alcoholic beverages

International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs

Group

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## Section 12 - ECOLOGICAL INFORMATION

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

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
ethanol	LOW	MED	LOW	HIGH
acetone	LOW	HIGH	LOW	HIGH

## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

## Section 14 - TRANSPORTATION INFORMATION



Labels Required: FLAMMABLE LIQUID

### HAZCHEM:

●2YE (ADG7)

### ADG7:

Class or division: 3  
UN No.: 1170  
Special provisions: 144  
Limited quantities: 1 L

Subsidiary risk: None  
UN packing group: II  
Packing Instructions: None  
Portable tanks and bulk containers - T4  
Instructions:

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## Section 14 - TRANSPORTATION INFORMATION

Portable tanks and bulk containers - Special provisions: TP1  
Packagings and IBCs - Packing instruction: P001; IBC02  
Packagings and IBCs - Special packing provisions: None  
Shipping Name: ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

### Land Transport UNDG:

Class or division: 3  
UN No.: 1170  
Subsidiary risk: None  
UN packing group: II  
Shipping Name: ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

### Air Transport IATA:

ICAO/IATA Class: 3  
UN/ID Number: 1170  
Special provisions: A3  
ICAO/IATA Subrisk: None  
Packing Group: II

Shipping Name: ETHANOL

### Maritime Transport IMDG:

IMDG Class: 3  
UN Number: 1170  
EMS Number: F- E , S- D  
Limited Quantities: 1 L  
IMDG Subrisk: None  
Packing Group: II  
Special provisions: 144  
Shipping Name: ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

## Section 15 - REGULATORY INFORMATION

### POISONS SCHEDULE

None

### REGULATIONS

Regulations for ingredients

#### ethanol (CAS: 64-17-5) is found on the following regulatory lists;

"Australia Exposure Standards", "Australia Hazardous Substances", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Illicit Drug Reagents/Essential Chemicals - Category III", "Australia Inventory of Chemical Substances (AICS)", "Australia National Pollutant Inventory", "Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 18: List of products to which the Code does not apply", "IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances", "IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Air Transport Association (IATA) Dangerous Goods Regulations", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD Representative List of High Production Volume (HPV) Chemicals"

#### acetone (CAS: 67-64-1) is found on the following regulatory lists;

"Australia Exposure Standards", "Australia Hazardous Substances", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Illicit Drug Reagents/Essential Chemicals - Category III", "Australia Inventory of Chemical Substances (AICS)", "Australia National Pollutant Inventory", "Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)", "Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix F (Part 3)", "Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 18: List of products to which the Code does not apply", "IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances", "OECD Representative List of High Production Volume (HPV) Chemicals", "United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control - Table II"

No data for Dentsply Calibra Silane Coupling Agent (CW: 4993-51)

## Section 16 - OTHER INFORMATION

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:  
[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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Section 16 - OTHER INFORMATION

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*This is the end of the MSDS.*