



Tech-Bond Cranial GEL

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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Version: 1.0

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

1.1. Product identifier

Product name : Tech-Bond Cranial GEL

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

Use of the substance/mixture : Surface Incensitive (SI), Structural Cyanoacrylate (SCA) Gel Adhesive

1.3. Details of the supplier of the safety data sheet

Tech-Bond Solutions
2055 Corvair Ave., suite 108
Columbus, OH 43207 - United States
T 877 565 7225; F 866 411 0032
sales@tech-bond.net - <http://www.tech-bond.net>

1.4. Emergency telephone number

Emergency number : 1-800 535 5035

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Liq. 4 H227
Skin Irrit. 2 H315
Eye Irrit. 2A H319
STOT SE 3 H335

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H227 - Combustible liquid
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313 - If eye irritation persists: Get medical advice/attention
P501 - Dispose of contents/container to local, regional, national, and international regulations.

Precautionary phrases

CYANOACRYLATE. DANGER. BONDS SKIN AND EYES IN SECONDS. CONTACT THROUGH CLOTHING (COTTON) MAY CAUSE BURNS. KEEP OUT OF REACH OF CHILDREN!

2.3. Other hazards

This product is not identified as a PBT substance.

WARNING: Cyanoacrylate. Eye irritant. Bonds skin and eyes in seconds. This adhesive gives a virtually immediate, strong bond: apply only to surfaces to be bonded. Do not get adhesive on your skin or other parts of your body, or that of others. In case of body contact, flush with water. Seek medical attention for any eye or internal contact. Keep out of the reach of children.

SECTION 3: Composition/information on ingredients

3.1. Substances

Full text of H-phrases: see section 16

3.2. Mixture

Hazardous ingredients:

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Name	Product identifier	%	GHS-US classification
ethyl-2-cyanoacrylate	(CAS No) 7085-85-0	>80%	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : If you feel unwell, seek medical advice (show the label where possible). Never give anything by mouth to an unconscious person.
- First-aid measures after inhalation : Overexposure may be irritating to the respiratory system. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.
- First-aid measures after skin contact : Do not pull bonded skin apart. Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Contact through clothing can cause immediate polymerization, exothermic reaction and burning. Removal of clothing can remove bonded skin. Submerge with water and soak affected area. Wear a plastic (not cotton) apron for added protection. Get immediate medical advice/attention. If the lips are accidentally bonded, apply warm soapy water, encourage maximum wetting and pressure from saliva inside the mouth and peel or roll lips apart. **DO NOT TRY TO PULL LIPS APART.** Burn: should be treated normally after the lump of cyanoacrylate is released from the tissue.
- First-aid measures after eye contact : Immediately flush with warm water for at least 15 minutes, get prompt medical attention and apply gauze patch. Cyanoacrylate will bond to eye protein and cause a lachrymatory effect which will help de-bond the adhesive. Keep eye covered until de-bonding is complete (usually with 1-4 days). Get immediate medical attention.
- First-aid measures after ingestion : This route is not likely. Material will rapidly polymerise in the mouth prior to ingestion. Ensure breathing passages are not obstructed. Get immediate medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Irritation of the eye tissue. Causes skin and eye irritation. Not expected to present a significant hazard under anticipated conditions of normal use.
- Symptoms/injuries after inhalation : May cause drowsiness or dizziness. May cause respiratory irritation.
- Symptoms/injuries after skin contact : May cause irritation to skin. Cyanoacrylate bonds skin and eyes in seconds. In the case of large spills on the skin, superficial burns may occur.
- Symptoms/injuries after eye contact : Causes eye irritation. Cyanoacrylate bonds skin and eyes in seconds.
- Symptoms/injuries after ingestion : Ingestion unlikely. Material will rapidly polymerise in the mouth prior to ingestion.

4.3. Indication of any immediate medical attention and special treatment needed

If exposed or concerned, get medical advice and attention.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Alcohol-resistant foam. Dry powder. Carbon dioxide. Water spray or fog.
- Unsuitable extinguishing media : Solid water jet ineffective as extinguishing medium. Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Combustible liquid.
- Explosion hazard : In combustion emits toxic fumes of carbon dioxide, carbon monoxide and nitrogen oxides.
- Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. Use a water spray to cool exposed surfaces and to protect fire-fighters. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray or fog for cooling exposed containers. Avoid (reject) fire-fighting water to enter environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.
- Other information : Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Eliminate every possible source of ignition. Ensure adequate ventilation. Avoid all contact with skin, eyes, or clothing. Handle in accordance with good industrial hygiene and safety practice.

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6.1.1. For non-emergency personnel

- Protective equipment : Use appropriate personal protection equipment (PPE).
Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Evacuate unnecessary personnel. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use appropriate personal protection equipment (PPE).
Ventilate area.

6.2. Environmental precautions

Do not allow water (or moist air) contact with this material. Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- For containment : Absorb excess liquid spillage on inorganic adsorbent material such as fine sand, brick dust etc. Place spent adsorbent in sealed packages and contact specialist waste disposal contractor. Collect spillage.
Methods for cleaning up : Clear up spills immediately and dispose of waste safely. Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite. Notify experts. Collect spillage. Or flood with water slowly to complete polymerization (~10:1, adhesive : water). Scrape off floor. Cured material can be disposed of as non-hazardous waste.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid contact of substance with water. Do not eat, drink or smoke when using this product. Do not get in eyes, on skin, or on clothing. Do not handle until all safety precautions have been read and understood. Observe very strict hygiene - avoid contact. Keep away from ignition sources.. Use only in a well-ventilated area. Use personal protective equipment as required. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour.
Hygiene measures : Do not eat, drink or smoke in areas where product is used. Handle in accordance with good industrial hygiene and safety practice. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Comply with applicable regulations.
Storage conditions : Keep away from direct sunlight. Keep container tightly closed. Keep cool. Keep in fireproof place. Store in a dry place. Keep container closed when not in use.
Incompatible products : Amines. Oxidizing agents. Alkali metals. Water. Alcohols. Strong bases. Strong acids.
Incompatible products : Sources of ignition. Direct sunlight.
Storage temperature : Refrigerated storage (2°C to 8°C) is recommended for optimum shelf life.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethyl-2-cyanoacrylate (7085-85-0)		
USA ACGIH	ACGIH TWA (ppm)	0.2 ppm
USA ACGIH	ACGIH STEL (ppm)	0.2 ppm

8.2. Exposure controls

- Appropriate engineering controls : Ensure all national/local regulations are observed. Avoid all unnecessary exposure.
Personal protective equipment : Protective clothing. Protective goggles. Gloves. Full protective flameproof clothing. Respiratory protection of the dependent type. Avoid all unnecessary exposure.
Materials for protective clothing : Keep suitable chemically resistant protective clothing readily available for emergency use.
Hand protection : Wear chemically resistant protective gloves.
Eye protection : Chemical goggles or safety glasses.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Wear appropriate mask.
Other information : Do not eat, drink or smoke during use.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Gel
Appearance	: Clear Colorless gel.
Color	: Colourless.
Odor	: Irritating. sharp.
Boiling point	: > 300 °F
Flash point	: > 176 °F
Self ignition temperature	: > 450 °C
Vapour pressure	: < 0.5 mmHg @75°F
Specific gravity	: 1.1
Solubility	: Reacts with water. Soluble in Acetone.
Evaporation rate	: Negligible
Percent volatile	: 85 - 95 % weight [Test Method: Estimated]
VOC	: <=105 g/l [Test Method: tested per EPA method 24]

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions. Polymerises rapidly with water.

10.3. Possibility of hazardous reactions

Hazardous reactions will not occur under normal conditions. Polymerization may occur on exposure to conditions or materials listed below. Polymerization can be rapid.

10.4. Conditions to avoid

Direct sunlight. Heat, high temperature. Moisture, humidity.

10.5. Incompatible materials

Amines. Water. Alkalis. Oxidizing agent. Alcohols.

10.6. Hazardous decomposition products

Toxic fume. Carbon monoxide. Carbon dioxide. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

ethyl-2-cyanoacrylate (7085-85-0)	
LD50 oral rat	> 5000 mg/kg bodyweight (Rat; Experimental value,Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg bodyweight (Rabbit; Experimental value,Rabbit; Experimental value)

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Negligible ecotoxicity.

12.2. Persistence and degradability

Tech-Bond Cranial GEL	
Persistence and degradability	No data available.

ethyl-2-cyanoacrylate (7085-85-0)	
Persistence and degradability	No data available.

12.3. Bioaccumulative potential

Tech-Bond Cranial GEL	
Bioaccumulative potential	No bioaccumulative potential

ethyl-2-cyanoacrylate (7085-85-0)	
Bioaccumulative potential	No bioaccumulative potential

12.4. Mobility in soil

Considered very low due to rapid polymerization with water.

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12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Remove waste in accordance with local and/or national regulations.
Sewage disposal recommendations : Do not discharge into drains or the environment.
Waste disposal recommendations : Transfer to a suitable container and arrange for collection by specialized disposal company. Or polymerize adhesive slowly with water (~10:1, adhesive : water). Hardened product can be disposed of as non-hazardous waste by licensed contractors. Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Transport document description : NA1993 Combustible liquid, n.o.s., 9, III
UN-No.(DOT) : UN3334
DOT NA no. : NA1993
DOT Proper Shipping Name : Combustible liquid, n.o.s.
Department of Transportation (DOT) Hazard Classes : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name
Packing group (DOT) : III - Minor Danger
DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / (1 + a (tr - tf))$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
Marine pollutant : No

Additional information

Environmentally hazardous : No

ADR

Transport document description : UN UN3334 aviation regulated liquid, n.o.s., 9
Class (ADR) : 9 - Miscellaneous dangerous substances and articles

Transport by sea

Proper Shipping Name (IMDG) : Not regulated

Air transport

UN-No.(IATA) : UN3334
Proper Shipping Name (IATA) : aviation regulated liquid, n.o.s.
Class (IATA) : 9 - Miscellaneous Dangerous Goods
Packing group (IATA) : III - Minor Danger

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SECTION 15: Regulatory information

15.1. US Federal regulations

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SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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ethyl-2-cyanoacrylate (7085-85-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Tech-Bond Cranial GEL

WHMIS Classification	Hazard Class B.3, D.2B
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EU-Regulations

EUH202: Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin Irrit. 2 H315
Eye Irrit. 2A H319
STOT SE 3 H335

15.2.2. National regulations

No additional information available

15.3. US State regulations

Proposition 65 No Significant Risk Levels (NSRLs): This product contains no ingredient under Proposition 65 that is classified as a significant risk.

ethyl-2-cyanoacrylate (7085-85-0)

U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixturejs, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Full text of H-phrases:

Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 4	Flammable liquids, Category 4
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H227	Combustible liquid
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

WARNING: Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Contact through clothing (cotton) may cause burns. Keep out of the reach of children.

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 2 Moderate Hazard
Physical : 1 Slight Hazard

SDS US (GHS HazCom 2012)

This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

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