

MATERIAL SAFETY DATA SHEET

SECTION 1 Identification of the Substance/Preparation and of the Company

1.1 Product Trade Name	Super-Bond C&B Green Activator Super-Bond D-Liner II PLUS Green Activator Chemiace II Green Activator
1.2 Exporter: Name	Sun Medical Co., Ltd.
Address	571-2 Furutaka-cho, Moriyama, Shiga, 524-0044, Japan
Telephone	81-77-582-9981
Facsimile	81-77-582-9984
e-mail	export@sunmedical.co.jp

SECTION 2 Composition / Information on Ingredients

	CAS No.	UN No.	Percent	Symbol	R-Phrase
Preparation	----	2582	----	Xi	R 36/38
Ingredients	CAS No.	UN No.	Percent	Symbol	R-Phrase
citric acid · H ₂ O	77-92-9	----	approx. 10%	---	----
ferric chloride · 6H ₂ O	10025-77-1	2582	approx. 3%	---	----
water	7732-18-5	----	balance	---	----

SECTION 3 Hazards Identification

3.1 Emergency overview	Acid, corrosive liquid.
3.2 Potential health effects	
Eye	Corrosive. May cause severe irritation or burns, and possible permanent eye damages.
Skin	Corrosive. May cause irritation.
Ingestion	Corrosive. May cause sore throat, nausea and burns of the mouth, throat and stomach.
Inhalation	Inhalation is not expected hazard unless misted or heated to high temperature. Mist or vapor can cause severe irritation to the respiratory system.
Effects of long-term or repeated exposure	No information found.

SECTION 4 First-Aid Measures

4.1 Eye	Immediately flush with flowing water for at least 15 minutes. Get medical attention.
4.2 Skin	Flush with soap and plenty of water. Get medical attention if irritation develops or persists.
4.3 Ingestion	Promptly drink several glasses of water or milk to dilute. Get medical attention.
4.4 Inhalation	Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION 5 Fire-Fighting Measures

5.0 Flammable properties	Not considered to be a fire hazard. Contact with most metals may cause formation of flammable and explosive hydrogen gas.		
5.1 Flash point	Not applicable.	5.2 Autoignition temp.	Not known.
5.3 Flammable limit	Not applicable.	5.4 Suitable extinguishing media	Use any media suitable for extinguishing surrounding fire. If water is used, use in abundance.
5.5 Hazardous decomposition products	Toxic gases such as carbon monoxide, may be released in a fire.	5.6 Special protective equipment	During emergency conditions, overexposure to decomposition products may cause health hazard. Self-contained breathing apparatus should be worn.

SECTION 6 Accidental Release Measures			
6.1 Personal precaution	Wear personal protective equipment (e.g. gloves, boots, clothing, safety goggle or a full-face shield).		
6.2 Environmental precautions	May be hazardous to the environment. Special attention should be given to water. This material is acid.		
6.3 Methods for cleaning-up	In case material is released or spilled, ventilate area of leak or spill. Neutralize the spills with a weak alkaline material (soda ash or lime). Then absorb with an inert absorbent (e.g. sand, earth, vermiculite), place in a chemical waste container. Do NOT wash away into sewer.		
SECTION 7 Handling and Storage			
7.1 Handling	Observe normal warehouse handling procedures. Protect against physical damages.		
7.2 Storage	Store in a cool, dry, dark and well-ventilated place. Store away from alkalis.		
SECTION 8 Exposure Controls / Personal Protection			
8.1 Engineering measures			
Ventilation	Use general and/or local exhaust to keep exposures to a minimum.		
Other protective equipment	Eye wash station and safety showers near work area.		
8.2 Personal protection			
Respiratory protection	None required during ordinary use of this product.		
Hand protection	Use impervious protective gloves to prevent skin contact.		
Eye protection	Use safety glasses.		
Skin protection	Use impervious protective gloves to prevent skin contact.		
Exposure guideline	Ferric chloride: OSHA PEL 1 mg(Fe)/m ³ (TWA), ACGIH TLV 1 mg(Fe)/m ³ (TWA)		
SECTION 9 Physical and Chemical Properties			
9.1 Appearance	Green colored liquid	9.2 Odor	Slight
9.3 pH	approx. 1	9.4 Vapor density	Not known
9.5 Boiling point	approx. 100°C	9.6 Freezing point	approx. 0°C
9.7 Solubility in water	Completely miscible	9.8 Specific gravity	approx. 1
SECTION 10 Stability and Reactivity			
10.1 Stability	Stable under ordinary conditions of use and storage. Can react with metals to liberate hydrogen gas.		
10.2 Conditions to avoid	Avoid contact with incompatibles.		
10.3 Incompatibility (materials to avoid)	Alkalis.		
10.4 Hazardous decomposition products	Formic acid, carbon monoxide and carbon dioxide reported at fire temperature.		
10.5 Hazardous polymerization	Will not occur.		
SECTION 11 Toxicological Information			
11.1 Health hazards: (immediate, delayed, acute, chronic)	Contact with eye and skin can cause irritations or burns.		
11.2 Toxicity	(ferric chloride) (citric acid)	LD ₅₀ (Oral/rat): LD ₅₀ (Oral/rat):	450 mg/kg 3,000 mg/Kg
11.3 Mutagenicity	Not known.		
11.4 Carcinogenicity	(NTP) No, (IARC) No		

SECTION 12 Ecological Information	
12.1 General	This substance may be hazardous to the environment; special attention should be given to water.
12.2 Mobility	When released, this substance may leach into groundwater.
12.3 Degradability	Not known.
12.4 Accumulation	Not known.
12.5 Ecotoxicity	Not known.
12.6 Other adverse effects	Not known.
SECTION 13 Disposable Considerations	
13.1 Danger in disposal	Should be handled as hazardous waste.
13.2 Disposal method	(Consult federal, state and local regulations) Do not empty into sewer. This substance should be sent to an approved incinerator or waste facility.
SECTION 14 Transport Information	
14.1 Precautions for transport	Corrosive
14.2 UN	UN2582 – ferric chloride solution
14.3 IMDG	Class 8, PG III
14.4 ICAO/IATA	Class 8, PG III
SECTION 15 Regulatory Information	
15.1 RTECS	citric acid GE7350000 ferric chloride solution LJ9100000
15.2 EU Classification	Xi, R36/38 (Irritating to eyes and skin)
SECTION 16 Other Information	
16.1	Prepared / Revised in December 2001 by Sun Medical Co., Ltd.
16.2	This Product is for dental professional use only.
16.3	The information above is believed to be accurate. However, Sun Medical Co., Ltd. makes NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Users must take their own investigations to determine the suitability of the information and the Product for their particular purposes.