



MATERIAL SAFETY DATA SHEET

FILE NO.: i4V1
MSDS DATE: 11/05/2009
MSDS No.: i4110509

Product: i4

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: i4 Instant Adhesive
PRODUCT CODES: i4OZ1, i4OZ2, i4OZ16
COMPANY NAME: SmartAdhesives LLC
ADDRESS: San Francisco, CA 94129

EMERGENCY PHONE: Chemtrec: 1-800-424-9300

PRODUCT USE: Cyanoacrylate adhesive; Industrial use
ISSUE DATE: 11-05-2009

SECTION 2: INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT:	C.A.S. No.	% by Wt.
Ethyl-2-cyanoacrylate	7085-85-0	90-98%

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Normal physical form - liquid

IMMEDIATE HEALTH AND ENVIRONMENTAL HAZARDS

Combustible. Causes eye irritation and skin sensitization. May cause respiratory tract irritation. Rapid polymerization occurs upon contact with water, cotton or alkaline substances. This reaction generates heat and may cause skin inflammation or burns upon contact.

POTENTIAL HEALTH EFFECTS

EYE CONTACT: Eye irritant. Causes excessive tearing.

SKIN CONTACT: Bonds skin instantly. May cause skin sensitization. Large drop can burn skin in rare circumstances. Cured adhesive does not present health hazard on skin.

INHALATION: May cause irritation to nose, throat, and respiratory tract.

INGESTION: Not expected to be ingested under normal conditions of use. May be harmful if swallowed. May adhere to inside of mouth. Saliva will lift adhesive within several days.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Symptoms of overexposure include burning sensation, coughing, wheezing, laryngitis, gastrointestinal upset, and/or respiratory tract irritation.

May cause an allergic skin reaction and may aggravate existing eye, skin, and respiratory disorders.

CARCINOGENICITY

Ethyl-2-Cyanoacrylate

OSHA: NO

NTP: NO

IARC: NO

SECTION 4: FIRST AID MEASURES

EYES:	Immediately flush eyes with plenty of water. Seek medical advice. If eyelids are bonded, release eyelashes with warm water by covering with wet pad. Do not attempt to pull eyelids open. Cyanoacrylate will bond to protein in eye and cause tearing which will help to unbond the adhesive. Keep eye covered until unbonded (usually within 1-3 days).
SKIN:	Immediately remove product from skin with dry cloth or towel. Soak skin in warm, soapy water. Gently peel apart using a blunt instrument. For fingers bonded together, use rolling motion. Never pull skin or lips apart with direct opposite force. If unsuccessful or symptoms occur, seek medical advice. Wash contaminated clothing prior to reuse.
INGESTION:	Make sure breathing passages are unobstructed. Product will polymerize quickly and bond to mouth, so product is unlikely to be ingested. Saliva will separate cured product from inside the mouth within several hours. Do not ingest separated material. If symptoms occur, seek medical advice.
INHALATION:	Move to fresh air. If symptoms persist, seek medical advice.
PHYSICIAN NOTES:	Surgery is usually not necessary to separate accidentally bonded tissues. Experience has shown that bonded tissues are best treated by passive, non-surgical first aid. Cured adhesive does not pose health risk.

SECTION 5: FIRE FIGHTING MEASURES

FLAMMABLE LIMITS UPPER: (% BY VOLUME) LOWER:	not determined not determined
FLASH POINT: AUTOIGNITION TEMP:	190°F (88°C) (closed cup) >=200°C (392°F)
NFPA HAZARD CLASSIFICATION HEALTH: *2 FLAMMABILITY: 2 REACTIVITY: 2 OTHER: w (unusually reactive with water)	
HMIS HAZARD CLASSIFICATION HEALTH: 2 FLAMMABILITY: 2 PHYSICAL HAZARD: 2 PROTECTION: none	
EXTINGUISHING MEDIA:	Use foam, dry chemical powder, water spray, or carbon dioxide. Do not use water jet.
SPECIAL FIRE FIGHTING PROCEDURES:	Wear positive pressure, self-contained breathing apparatus and full protective clothing.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None.
HAZARDOUS DECOMPOSITION PRODUCTS:	see Section 10

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES:	No action shall be taken involving any personal risk or without suitable training. Evacuate untrained and unprotected people from release areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Ventilate area. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8). Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Avoid handling or clean-up of cyanoacrylate adhesive with cellulose fibers, such as cloth gloves, rags, paper towels, or clothing. A reaction with cellulose fibers can occur that can cause smoke and fumes. Use inert material. Flood with water to complete polymerization
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and scrape off floor. Cured material can be disposed of as non-hazardous waste. For larger spills, first extinguish all sources of ignition. Material is combustible. Make sure to first stop spill or leak at source before clean-up. Dike if necessary.

SECTION 7: HANDLING AND STORAGE

HANDLING:

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face with soap and water before eating, drinking and smoking. Minimize ignition sources.

Do not get in eyes. Do not breathe vapor or mist. Do not ingest. Avoid contact with skin or clothing. Use only with adequate ventilation. Do not use when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Avoid contact with fabric or paper goods. Contact with these materials may cause rapid polymerization which can generate smoke and strong irritating vapors and cause thermal burns.

STORAGE:

Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from sources of heat and ignition, alkaline substances, and water. Keep container tightly closed and sealed until ready for use. Refrigeration helps preserve shelf life. Store in accordance with local regulations.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

VENTILATION :

Use mechanical ventilation and/or local exhaust, sufficient in pattern and volume, to maintain vapor concentration below established TLV requirements.

RESPIRATORY PROTECTION:

Avoid breathing vapors. Atmospheric levels should be maintained below the exposure guidelines. If these levels are exceeded, wear an approved, full face, supplied air respirator or an approved positive pressure, self-contained breathing apparatus.

EYE PROTECTION:

Avoid contact with eyes. Use safety glasses with side shields or indirect vented goggles.

SKIN PROTECTION:

Avoid contact with skin. Use nitrile gloves and synthetic apron to prevent contact. Do not use PVC, nylon or cotton.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Facilities storing or utilizing this material should be equipped with eye wash fountains and safety shower.

WORK HYGIENIC PRACTICES:

Remove contaminated clothing and launder before next use. Wash thoroughly after handling.

EXPOSURE GUIDELINES:

	<u>Organization</u>	<u>Type</u>	<u>Limit</u>
Ethyl-2-Cyanoacrylate	ACGIH (TLV)	TWA	0.2 ppm
	OSHA (PEL)	TWA	not listed

ACGIH: American Conference of Governmental Industrial Hygienists
 OSHA: Occupational Safety and Health Administration

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

COLOR & APPEARANCE:

Clear or straw color liquid

VAPOR PRESSURE (mmHg):

Not available

ODOR THRESHOLD:

Acrid

VAPOR DENSITY (AIR=1):

>1

PHYSICAL FORM:

Liquid

SPECIFIC GRAVITY (H2O=1):

1.05

FLAMMABLE LIMITS

EVAPORATION RATE:

Not available

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Revision Date: 11/05/2009

LEL:	not determined	SOLUBILITY IN WATER:	Polymerizes in presence of water
UEL:	not determined	VISCOSITY:	150 ± 10 cP
BOILING POINT:	>=374°F (190°C)	VOLATILE ORGANIC COMPOUNDS (VOC)	
AUTOIGNITION TEMP:	>=200°C (392°F)	VOC:	NA
FLASH POINT:	190°F (88°C)	VOC less H2O & Exempt Solvent:	NA
(Pensky-Martens Closed Cup ASTM D 93)			
pH AS SUPPLIED:	Not available		

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable under recommended storage conditions. Water will cause polymerization.

MATERIALS AND CONDITIONS TO AVOID (STABILITY):

Rapid polymerization will occur in the presence of water, amines, alkalis and alcohols. Polymerization is an exothermic reaction and generates heat. Incompatible with water, oxidizing agents, reducing agents, amines, alcohols, alkalis, and acids.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

Carbon oxides. Nitrogen oxides. Aldehydes. Methyl Methacrylate.

HAZARDOUS POLYMERIZATION: Spontaneous polymerization.

SECTION 11: TOXICOLOGICAL INFORMATION**TOXICOLOGICAL INFORMATION:**

Acute oral LD50: >5,000 mg/kg (rat)
Acute dermal LD50: >2,000 mg/kg (rabbit)

Continuous high volume usage can irritate mucous membranes and upper respiratory tract. Product may cause skin irritation and sensitization.

Target organs: eyes.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Disposal of this product, solutions and any by-products should at all times comply with Federal, State and local regulations. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA HAZARD CLASS: Not a RCRA hazardous waste.

SECTION 14: TRANSPORT INFORMATION**U.S. DEPARTMENT OF TRANSPORTATION (49 CFR)**

PROPER SHIPPING NAME: Combustible Liquid, N.O.S. (Cyanoacrylate ester)
HAZARD CLASS: Combustible liquid
ID NUMBER: NA 1993
PACKING GROUP: III
EXCEPTIONS: (not more than 450 liters) unrestricted

INTERNATIONAL AIR TRANSPORTATION (ICAO/IATA)

PROPER SHIPPING NAME: Aviation regulated liquids, N.O.S. (Cyanoacrylate ester)
HAZARD CLASS: 9
ID NUMBER: UN 3334
PACKING GROUP: none

EXCEPTIONS: (not more than 500ml) unrestricted

WATER TRANSPORTATION (IMO/IMDG)

PROPER SHIPPING NAME: Unrestricted
HAZARD CLASS: none
ID NUMBER: none
PACKING GROUP: none
MARINE POLLUTANT: none

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (Toxic Substance Control Act)

All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory. No 12(b) export notification is required.

311/312 HAZARD CATEGORIES:

Fire: Yes Reactivity: Yes Acute: Yes

SECTION 313: (Toxic chemicals subject to reporting requirements of that section and 40 CFR part 372 (EPCRA))

No products were found above de minimus levels

STATE REGULATIONS

California Prop. 65: No chemicals known to be present.

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

Hazardous Material Information System III (U.S.A.)	Health : *2 Flammability: 2 Physical Hazard: 2 Protection : none
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PREPARATION INFORMATION:

DISCLAIMER: The material in this Material Safety Data Sheet (MSDS) is, to the best of our knowledge, accurate as of the date issued. However, neither SmartAdhesives nor any of its subsidiaries or agents assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist. Given the quantity of variables that affect use and application of our products, many of which are within the user's control and unique to each user's knowledge, SMARTADHESIVES MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE.