

Safety Data Sheet

Product Code A-321

Date of issue: 07-01-2015 Revision Date: 05-05-2019

SECTION 1: IDENTIFICATION

PRODUCT IDENTIFIER

Product Name Bonding Enhancer

Product Code A -321

Intended Use(s): For professional use only

CONTACT INFORMATION FOR SUPPLIER OF SAFETY DATA SHEET

Factor II, Incorporated 5642 White Mountain Ave PO Box 1339 Lakeside AZ 85929 928-537-8387 www.factor2.com sales@factor2.com

EMERGENCY TELEPHONE NUMBERS

928-368-7502

SECTION 2: HAZARD(S) IDENTIFICATION

GHS Classification

Hazard class

Flammable liquid

Skin irritation

Eye irritation

Reproductive toxicity

STOT-single exposure

Aspiration hazard

Category 2

Category 2

Category 2

Category 2

Category 2

Category 3

Category 1

Acute aquatic toxicity

Hazard Pictogram









Category 1



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Signal Word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapor

H304 May be fatal if swallowed and enters airways

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H361 Suspected of damaging fertility or the unborn child

H371 May cause damage to organs (vasculature)

H400 Very toxic to aquatic life

Precautionary statements

Prevention

P201 Obtain special instructions before use

P202 Do not handle until all safety precautions have been read and understood

P210 Keep away from heat/sparks/open flame/hot surfaces. No smoking.

P233 Keep container tightly closed

P240 Ground/bond container and receiving equipment

P241 Use explosion-proof electrical/ventilating/lighting equipment

P242 Use only non-sparking tools

P243 Take precautionary measures against static discharge

P260 Do not breathe dust/fumes/gas/mist/vapor/spray

P264 Wash skin thoroughly after handling

P270 Do not eat, drink or smoke when using this product

P271 Use only outdoors or in a well-ventilated area

P273 Avoid release to the environment

P281 Use personal protective equipment as required

Response

P301+P310 + P331 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. DO NOT induce vomiting.

P303 + P361 + P364 + P353 + P314 IF ON SKIN (or hair): Immediately remove all contaminated clothing and wash before reuse. Rise skin with water/shower. Seek medical attention if you feel unwell.

P304 + P340 + P314 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention if you feel unwell. P305 + P351 + P338 + P314 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention if you feel unwell.



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Storage

P403+P405 + P233 + P235 Store locked up in a well-ventilated place. Keep container cool and tightly closed.

Disposal

P501 Dispose of contents/container to an approved waste disposal plant

SECTION 3: HAZARDOUS INGREDIENTS

Ingredient	CAS Number	Concentration
Cyclohexane	110-82-7	<95% by weight
Silicone dioxide amorphous	112945-52-5	>2% by weight
Proprietary ingredient		>2% by weight

The specific chemical identities have been withheld as a trade secret.

SECTION 4: FIRST-AID MEASURES

In the case of accident or if you feel unwell, see medical attention immediately. When symptoms persist, or in all cases of doubt, seek medical attention.

First-aid instructions by relevant routes of exposure include:

Inhalation Remove victim to fresh air and keep at rest in a position comfortable

for breathing. Seek medical attention if symptoms persist or after a

significant exposure.

Skin contact Immediately wash thoroughly with soap and water while removing

contaminated clothing and shoes. Seek medical attention. Wash

clothing and thoroughly clean shoes before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. If

worn and easy to do, remove contact lenses.

Ingestion Keep respiratory tract clear. DO NOT induce vomiting. Do not give

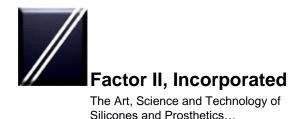
anything to drink. Never give anything by mouth to an unconscious

person. Seek medical attention immediately.

Most important symptoms and effects, both acute and delayed

Symptoms of poisoning may appear several hours later. Do not leave

victim unattended.



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First aid responders

First aid responders should pay attention to self-protection and use the recommended personal protective equipment when the potential for exposure exists.

Note to physician Treat symptomatically and supportively.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable extinguishing media Alcohol-resistant foam, carbon dioxide (CO2), dry

chemical

Unsuitable extinguishing media High volume water jet

Specific hazards during fire

Collect contaminated fire extinguishing water separately; do not allow run-off from firefighting to enter drains or water courses. Fire residues and contaminated water must be disposed of in accordance with local regulations. Take precautions to avoid static electricity discharge (which may cause ignition of organic vapors).

Hazardous decomposition products Carbon dioxide, carbon oxides

Specific extinguishing methods

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Evacuate area and eliminate sources of ignition. Use water spray to cool unopened containers. Remove undamaged containers from fire area if safe to do so.

Special protective equipment for firefighters

In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. Firefighting equipment should be thoroughly decontaminated after use.

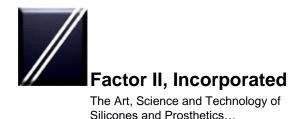
SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions and emergency procedures

Remove all sources of ignition, ventilate the area and keep upwind. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions

Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area by containment or oil barriers. Retain and dispose of contaminated wash water. Spills on porous surfaces can contaminate groundwater. Local authorities should be advised if significant spillages cannot be contained.



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Methods and materials for containment and cleanup procedures

Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapors/mist with a water spray jet. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. See Sections 13and 15 of this SDS for information regarding certain local or national requirements.

SECTION 7: HANDLING AND STORAGE

Technical measures

Ensure all equipment is electrically grounded before beginning transfer operations. This material can accumulate static charge due to its inherent physical properties and can therefore cause an electrical ignition source to vapors. In order to prevent a fire hazard, as bonding and grounding may be insufficient to remove static electricity, it is necessary to provide an inert gas purge before beginning transfer operations. Restrict flow velocity in order to reduce the accumulation of static electricity.

Local/total ventilation

Use with local exhaust ventilation. Use only in an area equipped with explosion proof exhaust ventilation.

Precautions for safe handling

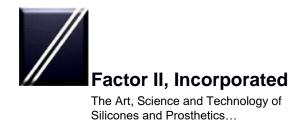
Do not get on skin or clothing. Do not breathe vapors or spray mist. Do not swallow. Do not get in eyes. Handle in accordance with good industrial hygiene and safety practice. Non-sparking tools should be used. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Keep container tightly closed. Take precautionary measures against static discharges. Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage

Keep away from food, drink and animal feeding stuffs. Keep container tightly closed and in a cool, well-ventilated place away from heat, sparks and flame. For safety reasons in case of fire, cans should be stored separately in closed containments. Store in accordance with the particular national regulations. Protect containers from physical damage.

Materials to avoid

May react with oxygen and strong oxidizing agents such as chlorates, nitrates, peroxides, etc



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SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

OSHA HAZARDOUS COMPONENTS	S				
		EXPOSI	JRE LIMITS		
		OSHA P	EL	ACGIH	TLV
Component Name, CAS Number		ppm	mg/m₃	ppm	mg/m₃
Cyclohexane, 110-82-7	TWA	300	1050	100	
	STEL				

Engineering Controls

Minimize workplace exposure concentrations. Use only in an area equipped with explosion proof exhaust ventilation. Use with local exhaust ventilation.

Personal Protective Equipment Pictograms







Respiratory

General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Eye/Face

Use safety goggles as a minimum when working with chemicals.

Hands

Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. For special applications, clarify the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands thoroughly before breaks and at the end of workday.

Skin/Body

Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Wear the following personal protective equipment: flame retardant antistatic



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protective clothing. Avoid skin contact by using protective clothing (gloves, aprons, boots, etc.).

Hygiene measures

Ensure that eye flushing systems and safety showers are located close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions. For further information regarding the use of silicones / organic oils in consumer aerosol applications, please refer to the guidance document regarding the use of these type of materials in consumer aerosol applications that has been developed by the silicone industry (www.SEHSC.com).

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Upper/lower flammability or explosive limits

Odor

Vapor pressure Odor threshold

Vapor density (air = 1.0)

На

Relative density

Melting point/freezing point

Solubility(ies)

Initial boiling point and boiling range

Flash point

Evaporation rate

Flammability (solid, gas)

Partition coefficient n-octanol/water

Auto-ignition temperature Decomposition temperature

Viscosity

Clear liquid Undetermined

Ether-like

77mm Hg at 20°C No data available

2.9

Not applicable

Undetermined

44°F (7°C) / Undetermined

Very slight in water

177°F (81°C)

1°F (-18°C) (closed cup)

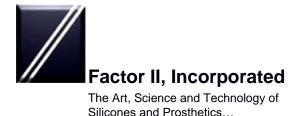
No data available No data available No data available 500°F (260°C) No data available No data available

SECTION 10: STABILITY AND REACTIVITY

Reactivity Non-reactive

Chemical stability Stable

Conditions to avoid Heat, sparks and flames



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Incompatible materials May react with oxygen and strong oxidizing

agents such as chlorates, nitrates,

peroxides, etc.

Other Hazardous polymerization will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

INFORMATION ON LIKELY ROUTES OF EXPOSURE

Inhalation, skin contact, ingestion, eye contact

ACUTE TOXICITY Not classified based on available information

Ingredients

Cyclohexane

Acute oral toxicity LD50 (Rat): > 5,000 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity LC50 (Rat): > 32,880 mg/m3

Exposure time: 4 h
Test atmosphere: vapor

Method: OECD Test Guideline 403

Acute dermal toxicity May cause skin irritation in susceptible persons

SKIN CORROSION/IRRITATIONMay cause skin irritation in susceptible persons

SERIOUS EYE DAMAGE/EYE IRRITATION

No adverse effects expected. Vapors may cause eye irritation.

RESPIRATORY AND SKIN SENSITIZATION

Did not cause sensitization on laboratory animals. Vapors may cause

respiratory system irritation.

GERM CELL MUTAGENICITY Animal testing did not show any mutagenic effects

CARCINOGENICITY Not classified based on available information

IARC No ingredient of this product present at levels greater than or equal to 0.1% is

identified as probable, possible or confirmed human carcinogen by IARC.

OSHANo ingredient of this product present at levels greater than or equal to 0.1% is

identified as a carcinogen or potential carcinogen by OSHA.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is

identified as a known or anticipated carcinogen by NTP.



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REPRODUCTIVE TOXICITY

No evidence of adverse effects on sexual function and fertility, based on animal experiments.

STOT-SINGLE EXPOSURE No adverse effects expected

STOT-REPEATED EXPOSURE Not classified based on available information

REPEATED DOSE TOXICITY Not classified based on available information

ASPIRATION TOXICITY May be fatal if swallowed and enters airways.

FURTHER INFORMATION

<u>Ingredients</u>

Cyclohexane

Remarks Symptoms of overexposure may include headache,

dizziness, tiredness, nausea and vomiting. Concentrations

substantially above the TVL value may cause narcotic

effects. Solvents may degrease the skin.

SECTION 12: ECOLOGICAL INFORMATION

Cyclohexane

Toxicity to fish LC50 Pimephales promelas (fathead minnow) 4.53 mg/l

Exposure time 96 h

Method OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (water flea) 0.9 mg/l

Exposure time 48 h

Method OECD Test Guideline 202

Toxicity to algae

EbC50 Selenastrum capricornutum (algae) 3.4 mg/l

Exposure time 72 h

NOEC 0.925 mg/l

Exposure time 72 h

Species Pseudokirchneriella subcapitata (green algae)

Method OECD Test Guideline 201

PERSISTENCE AND DEGRADABILITY

Ingredients
Cyclohexane

Biodegradability Result Expected to be readily biodegradable

Biodegradation 77%



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Exposure time 28 d

Silicones and Prosthetics...

Method OECD Test Guideline 301F

BIOACCUMULATIVE POTENTIAL This material is not expected to bioaccumulate

Bioconcentration factor (BCF) 33 – 275

MOBILITY IN SOIL No data available

OTHER ADVERSE EFFECTS

The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Product This product should not be allowed to enter drains, water courses or the

soil. Do not contaminate ponds, waterways or ditches with chemical or

used container.

Resource Conservation And Recovery Act (RCRA)

When a decision is made to discard this material as supplied, it is

classified as a RCRA hazardous waste.

Waste Code U056

Waste from residues Dispose of in accordance with local regulations.

Contaminated packaging

Dispose of as unused product. Do not re-use empty containers. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: TRANSPORT INFORMATION

US DOT

Proper shipping name Cyclohexane UN number UN1145

Hazard class(es) 3 Packing group II

Labels Flammable liquids

ERG Code 128



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IATA and ICAO

Proper shipping name Cyclohexane UN number UN1145

Hazard class(es) 3 Packing group II

Labels Flammable liquids

Packing instructions Passenger / Cargo aircraft – 353

SECTION 15: REGULATORY INFORMATION

EPCRA - EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW

CERCLA Reportable Quantity

Ingredients	CAS Number	Component RQ (lbs)
Cyclohexane	110-82-7	5,000

SARA 311/312 Hazards Fire hazard

Acute health hazard

SARA 302 No chemicals in this material are subject to the reporting

requirements of SARA Title III, Section 302.

SARA 313 The following components are subject to reporting levels

established by SARA Title III, Section 313:

Cyclohexane 110-82-7 95%

US STATE REGULATIONS

Massachusetts Right to Know Cyclohexane 110-82-7 95% **New Jersey Right to Know** Cyclohexane 110-82-7 95% Pennsylvania Right to Know Cyclohexane 110-82-7 95% **Rhode Island Right to Know** Cyclohexane 95% 110-82-7

California Prop 65 This product contains no chemical(s) known in the State of

California to cause birth defects or other reproductive

harm.

The ingredients of this product are reported in the following inventories:

NZIoC All ingredients listed or exempt

REACH All ingredients (pre-) registered or exempt



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TSCA All chemical substances in this material are included on or

exempted from listing on the TSCA Inventory of Chemical

Substances

AICS All ingredients listed or exempt IECSC All ingredients listed or

exempt

ENCS/ISHL All components are listed on ENCS/ISHL or exempted from

inventory listing

KECI All ingredients listed, exempt or notified

PICCS All ingredients listed or exempt

DSL All chemical substances in this product comply with the CEPA

1999 and NSNR and are on or exempt from listing on the

Canadian Domestic Substances List (DSL)

Inventories: AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16: OTHER INFORMATION

NFPA:

Health 1 – Slight Flammability 3 – High

Instability 0 – not significant

Special Hazard

HMIS III

Health 1 – Slight Flammability 3 – High

Physical Hazard 0 – not significant

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