

SAFETY DATA SHEET

SDS DATE: August 11, 2021



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **FluorLast™ with DABCO**

PRODUCT CODES: Cat# 1217-20

RESTRICTIONS ON USE: For laboratory research purposes. Not for drug or household use.

MANUFACTURER: BioVision, Inc.

ADDRESS: 155 S. Milpitas Boulevard, Milpitas, CA 95035

EMERGENCY PHONE: 858-373-8066

OTHER CALLS: 408-493-1800

FAX PHONE: 408-493-1801

EMAIL: sds@biovision.com

SECTION 2: HAZARDS IDENTIFICATION

Product Name/Chemical Name	Description	Volume	Safety Information
FluorLast™ with DABCO	Liquid (contains 1,4-Diazabicyclo[2.2.2]octane)	1217-20: 20 ml	See below

1,4-Diazabicyclo[2.2.2]octane:

Emergency Overview:

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable solids (Category 1), H228

Acute toxicity, Oral (Category 4), H302

Skin irritation (Category 2), H315

Serious eye damage (Category 1), H318

GHS Label elements, including precautionary statements



Pictogram:

Signal word:

Hazard statement(s):

Danger

H228 Flammable solid.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

Precautionary statement(s): P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P264 Wash skin thoroughly after handling.

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

P280 Wear protective gloves/ eye protection/ face protection.

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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

HMIS Classification

Health hazard:

Flammability:

Physical hazards:

NFPA Rating

Health Hazard:

Fire:

Reactivity Hazard:

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	EC-No.	Molecular Weight	Chemical Formula	Concentration
1,4-Diazabicyclo[2.2.2]octane	280-57-9	205-999-9	112.17	C ₆ H ₁₂ N ₂	<5%

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SECTION 4: FIRST AID MEASURES

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled: Immediately relocate self or casualty to fresh air. If breathing is difficult, give cardiopulmonary resuscitation (CPR). Avoid mouth-to-mouth resuscitation.

In case of skin contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In case of eye contact: Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

If swallowed: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. DO NOT induce vomiting unless directed to do so by medical personnel.

SECTION 5: FIRE-FIGHTING MEASURES

1,4-Diazabicyclo[2.2.2]octane:

Suitable extinguishing media: Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable Extinguishing Media: For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture: Nature of decomposition products not known. Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for fire fighters: Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information: Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective, equipment and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

Environmental precautions: Do not let product enter drains. Risk of explosion

Methods for cleaning up: Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7: HANDLING AND STORAGE

1,4-Diazabicyclo[2.2.2]octane:

Precautions for safe handling: Do not take internally. Wear gloves and mask when handling the product! Avoid contact by all modes of exposure.

Conditions for safe storage: Tightly closed. Keep away from heat and sources of ignition. strongly hygroscopic Air and moisture sensitive. Handle and store under inert gas. Storage class (TRGS 510): 4.1B: Flammable solid hazardous materials

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

1,4-Diazabicyclo[2.2.2]octane:

Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Exposure Controls

Appropriate Engineering controls (Ventilation etc.)

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN(EU).

Hand protection

Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling

Body protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Work/Maintenance Practices

Do not take internally. Facilities storing or utilizing this material should be equipped with an eye wash and a safety shower. Wash thoroughly after handling

Hygiene measures

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General industrial hygiene practice.



SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	1,4-Diazabicyclo[2.2.2]octane
Appearance:	Solid
pH:	No data available
Water Solubility:	610 g/l at 25 °C (77 °F) - soluble
Other Solubility:	No data available
Boiling Point (°C):	173.4 °C 344.1 °F at 1,000 hPa
Melting Point (°C):	156 - 159 °C (313 - 318 °F)
Flash Point (°C):	62.2 °C (144.0 °F) - closed cup - ISO 1523
Ignition Temperature (°C):	No data available
Density:	No data available
Flammability (solid, gas)	No data available
Explosive limits	LEL: No data UEL: No data
Vapor pressure (vs. Air or mmHg)	No data available
Vapor Density (vs. Air = 1)	No data available
Specific Gravity (Water = 1)	No data available
Octanol/Water Partition	No data available
Decomposition Temperature	No data available
Viscosity	No data available

SECTION 10: STABILITY AND REACTIVITY

Property	1,4-Diazabicyclo[2.2.2]octane
Reactivity	Stable under recommended transport or storage conditions
Chemical stability	Stable under recommended storage conditions
Polymerization	No data available
Conditions to avoid:	Exposure to moisture.
Materials to avoid:	Aluminum, Iron, Copper, Zinc
Hazardous decomposition products:	In the event of fire: see section 5

SECTION 11: TOXICOLOGICAL INFORMATION

1,4-Diazabicyclo[2.2.2]octane:

Acute toxicity: LD50 Oral - Rat - 700 mg/kg Remarks: (ECHA)

Symptoms: Possible damages: mucosal irritations

LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg Remarks: (ECHA)

Skin corrosion/irritation: Skin - Rabbit Result: Irritations Remarks: (ECHA)

Serious eye damage/eye irritation: Eyes - Rabbit Result: Causes serious eye damage. (OECD Test Guideline 405)

Respiratory or skin sensitization: Maximization Test - Guinea pig Result: negative (OECD Test Guideline 406)

Germ cell mutagenicity: Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: Metabolic activation

Method: OECD Test Guideline 471 Result: negative

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Classified based on available data

Teratogenicity: Classified based on available data

Specific target organ toxicity - single exposure (GHS): Classified based on available data

Specific target organ toxicity - repeated exposure (GHS): No data available

Aspiration hazard: No data available

Additional Information RTECS: HM0354200

To the best of our knowledge, the chemical, physical and toxicological properties have not been fully investigated

SECTION 12: ECOLOGICAL INFORMATION

1,4-Diazabicyclo[2.2.2]octane:

Persistence and degradability: Biodegradability aerobic - Exposure time 28 d Result: 7 % - Not readily biodegradable. (OECD Test Guideline 301B)

Toxicity Toxicity to fish static test LC50 - Cyprinus carpio (Carp) - > 100 mg/l - 96 h (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)

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Toxicity to algae static test EC50 - Pseudokirchneriella subcapitata (green algae) – 110 mg/l - 72 h (OECD Test Guideline 201) static test

NOEC - Pseudokirchneriella subcapitata (green algae) – 46 mg/l - 72 hm(OECD Test Guideline 201)

Toxicity to bacteria static test EC50 - Pseudomonas putida - 355.6 mg/l - 17 h Remarks: (ECHA)

Bio accumulative potential: No data available

Mobility in soil: No data available

PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13: DISPOSAL CONSIDERATIONS

Product: Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: TRANSPORT INFORMATION

1,4-Diazabicyclo[2.2.2]octane:

DOT (US): UN number: 1325 Class: 4.1 Packing group: II Proper shipping name: Flammable solids, organic, n.o.s. (1,4-Diazabicyclo[2.2.2]octane) Reportable Quantity (RQ): Poison Inhalation Hazard: No

IMDG: UN number: 1325 Class: 4.1 Packing group: II EMS-No: F-A, S-G Proper shipping name: FLAMMABLE SOLID, ORGANIC, N.O.S. (1,4- Diazabicyclo[2.2.2]octane)

IATA: UN number: 1325 Class: 4.1 Packing group: II Proper shipping name: Flammable solid, organic, n.o.s. (1,4-Diazabicyclo[2.2.2]octane)

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

SECTION 15: REGULATORY INFORMATION

1,4-Diazabicyclo[2.2.2]octane:

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

SARA 302 Components: SARA 302: No chemical in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards: 1,4-Diazabicyclo[2.2.2]octane: Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components: 1,4-Diazabicyclo[2.2.2]octane CAS-No. 280-57-9 Revision Date 1994-07-31

New Jersey Right To Know Components: 1,4-Diazabicyclo[2.2.2]octane CAS-No. 280-57-9 Revision Date 1994-07-31

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: OTHER INFORMATION

DISCLAIMER:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. BioVision, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.