

DAB (3,3'-diaminobenzidine) Chromogen and DAB Buffer Solution Safety Data Sheet

SECTION 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1 Product identifier

Product: **DAB (3,3'-diaminobenzidine) Chromogen and DAB Buffer Solution**

Catalog Numbers:

CAT. #	PRESENTATION	VOL
BSB 0015	PolyDetector Liquid DAB HRP Kit	15.0 ml
BSB 0016	PolyDetector Liquid DAB HRP Kit	50.0 ml
BSB 0017	PolyDetector Liquid DAB HRP Kit	100.0 ml
BSB 0018	PolyDetector Liquid DAB HRP Kit	200.0 ml
BSB 0018A	PolyDetector Liquid DAB HRP Kit	500.0 ml
BSB 0018B	PolyDetector Liquid DAB HRP Kit	1000.0 ml
BSB 0019A	PolyDetector DAB HRP Brown Chromogen	100.0 ml
BSB 0019B	PolyDetector DAB HRP Brown Chromogen	50.0 ml
BSB 0019C	PolyDetector DAB HRP Brown Chromogen	12.0 ml
BSB 0019G	PolyDetector DAB HRP Brown Chromogen	6.0 ml
BSB 0019F	PolyDetector DAB HRP Buffer	100.0 ml
BSB 0019E	PolyDetector DAB HRP Buffer	200.0 ml
BSB 0019D	PolyDetector DAB HRP Buffer	500.0 ml
BSB 0019	PolyDetector DAB HRP Buffer	1000.0 ml

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

Recommended use: Immunohistochemistry (IHC) reagent for detection/ancillary reagent
Not intended for use in humans or animals

1.3 Details of the supplier of the safety data sheet

Manufacturer	Bio SB, Inc.
Street Address	69 Santa Felicia Dr.
City, State, Zip, Country	Santa Barbara, CA 93117, USA
Technical Phone:	+1-805-692 2768
Fax:	+1-805-692 2769
E-mail:	info@biosb.com

1.4 Emergency telephone number

Telephone number: +1-805-692 2768 (9 AM - 5 PM PST, M-F)

DAB (3,3'-diaminobenzidine) Chromogen and DAB Buffer Solution Safety Data Sheet

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the mixture

Classification OSHA/HCS Status (29 CFR 1920.1200)

According to OSHA Hazard Communication Standard this mixture is classified as hazardous

Classification (EC 1272/2008)

According to Regulation (EC) No. 1271/2008 this mixture is classified as hazardous

Human health	H341 Germ Cell Mutagenicity Category 2 H350 Carcinogenicity Category 1B
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For the full Text for all Hazard Statements mentioned in this Section, see Section 16.

2.2 Label elements

Contains 3,3'-diaminobenzidine



Label In Accordance With (EC) No. 1272/2008

This product is classified and labeled in accordance with Regulation (EC) No 1272/2008 (GHS/CLP).

Hazard Pictograms GHS08

Signal Word Danger

Hazard Statements

H341	Suspected of causing genetic defects.
H350	May cause cancer.

Precautionary Statements

Prevention

P201	Obtain special instructions before use
P202	Do not handle until all safety precautions have been read and understood.

Response

Storage

P280	Wear protective clothing, gloves, wear eye and face protection.
P308+313	IF exposed or concerned: Get medical advice/attention.
P405	Store locked up
P501	Dispose of contents and container in accordance with all local, regional, national and international regulations

2.3 Other information

Hazards not otherwise classified

None known

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous which require reporting in this section.

Occupational exposure limits are listed in Section 8.

DAB (3,3'-diaminobenzidine) Chromogen and DAB Buffer Solution Safety Data Sheet

Component	Chemical Name	% Conc.	CAS#	EC#	Classification (pure ingredient)	Classification (Kit)
DAB Chromogen	3,3'-diaminobenzidine	≥5-≤ 10	91-95-2	202-110-6	Acute Tox. 4; ; Muta.2; Carc. 1B; H302, H341, H350	Acute Tox. 4; Muta.2; Carc. 1B; H302, H341, H350
DAB Buffer	Hydrogen Peroxide	< 0.1	772284-1	231-765-0	Ox. Liq. 1; Acute Tox. 4; Skin Corr. 1A; H271, H302 + H332, H314	Ox. Liq. 1; Acute Tox. 4; Skin Corr. 1A; H271, H302 + H332, H314

The Full Text for all Hazard Statements are Displayed in Section 16.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and do not require report in this section. Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: FIRST AID MEASURES

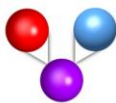
4.1. Description of first aid measures

Inhalation	In case of inhalation of spray mist: Move person into fresh air and keep at rest. Get medical attention if any discomfort continues. If breathing stops, provide artificial respiration. Get medical attention immediately!
Ingestion	Immediately rinse mouth and drink plenty of water (200-300 ml). DO NOT INDUCE VOMITING! NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Get medical attention.
Skin contact	Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.
Eye contact	Promptly wash eyes with plenty of water while lifting the eye lids. Make sure to remove any contact lenses from the eyes before rinsing. Continue to rinse for at least 15 minutes. Obtain medical attention and bring these instructions.

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

Inhalation	May cause coughing or mild irritation.
Ingestion	May cause discomfort if swallowed.
Skin contact	Prolonged skin contact may cause redness and irritation.
Eye contact	May cause temporary eye irritation.

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



DAB (3,3'-diaminobenzidine) Chromogen and DAB Buffer Solution

Safety Data Sheet

If seeking medical attention show Safety Data Sheet to physician. No specific first aid measures noted. Treat Symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media Fire can be extinguished using: Water spray. Foam. Powder.

5.2. Special hazards arising from the substance or mixture

Specific hazards product is non-combustible. If heated, irritating vapors may be formed. Hydrogen Chloride (HCl). When heated and in case of fire, very toxic nitrogen oxides are formed.

5.3. Advice for firefighters

Protective equipment for fire-fighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Stop leak if possible without any risk. Remove or isolate all sources of ignition. Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Do not allow to enter drains, sewers or watercourses.

6.3. Methods and material for containment and cleaning up

Absorb spillage with suitable absorbent material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations. Flush with plenty of water to clean spillage area. Do not contaminate water sources or sewer.

6.4. Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Avoid inhalation of vapors/spray and contact with skin and eyes. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place. Refer to product label. Empty containers retain product residues. Follow all SDS precautions in handling empty containers.

Storage Class: Refer to product datasheet.

DAB (3,3'-diaminobenzidine) Chromogen and DAB Buffer Solution Safety Data Sheet

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name: 3,3'-diaminobenzidine, >5% <10%

8.2. Exposure controls

Protective equipment:	Protective gloves, protective clothing, and safety glasses
Process conditions:	Provide eyewash station.
Engineering measures:	Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of spray.
Respiratory equipment:	No specific recommendation made, but respiratory protection must be used if the general level exceeds the recommended occupational exposure limit.
Hand protection:	Use suitable protective gloves if risk of skin contact. The most suitable glove must be chosen in consultation with the glove's supplier, who can inform about the breakthrough time of the glove material. Nitrile gloves are recommended but be aware that the liquid may penetrate the gloves. Not suitable for permanent contact. Frequent change is advisable. Latex or Nitrile gloves; thickness 0.11 mm, ASTM F1671, DIN EN 374 or equivalent; AQL 1.5.
Eye protection:	Wear safety goggles or face shield. DIN 166 or equivalent.
Other Protection:	Wear appropriate clothing to prevent any possibility of skin contact.
Hygiene measures:	DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes wet or contaminated. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.
Skin protection:	Wear apron or protective clothing in case of contact. Wash contaminated clothing before reuse.
Control of Environmental Exposure:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Liquid
Color	Brown/purple (DAB Chromogen), clear (DAB Buffer)
Odor	slightly amine-like
Solubility	Soluble in water
Initial boiling point and boiling range	<100 @ 760 mm Hg
Melting point (°C)	~ 0°C
Relative density	Not determined
Vapor density (air=1)	Not determined
Vapor pressure	Not determined
Evaporation rate	Not determined

DAB (3,3'-diaminobenzidine) Chromogen and DAB Buffer Solution

Safety Data Sheet

Viscosity	Not determined
Solubility Value (G/100G H ₂ O@20°C)	Not determined
Decomposition temperature (°C)	Not determined
Flash point	Not applicable
Auto Ignition Temperature (°C)	Not determined
Flammability Limit – Lower (%)	Not applicable
Flammability Limit – Upper (%)	Not applicable
Partition Coefficient (N-Octanol/Water)	Not determined
Explosive properties	Not applicable
Oxidizing properties	Does not meet the criteria for oxidizing

9.2. Other information

None

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stable under normal temperature conditions.

10.3. Possibility of hazardous reactions

No relevant information available for these concentrations

10.4. Conditions to avoid

Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials

No relevant information available for these concentrations

10.6. Hazardous decomposition products

No relevant information available for these concentrations

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Toxicological information	No information available
Acute toxicity:	Acute Toxicity (Oral LD ₅₀) Quantitative data about toxicity of this product not available
Skin Corrosion/Irritation:	
Human Skin Model Test	Not determined
Serious eye damage/irritation:	Not determined
Respiratory sensitization	Not determined
Skin sensitization	Not determined
Germ cell mutagenicity (InVitro)	Not determined
Carcinogenicity	Not determined
Reproductive Toxicity – Fertility	Not determined
Specific target organ toxicity - single exposure:	

DAB (3,3'-diaminobenzidine) Chromogen and DAB Buffer Solution

Safety Data Sheet

STOT - Single exposure	Not determined
Specific target organ toxicity - repeated exposure:	
STOT - Repeated exposure	Not determined
Aspiration hazard:	
Viscosity	Not determined
Inhalation	In high concentrations, vapors may irritate throat and respiratory system and cause coughing.
Ingestion	Harmful if swallowed.
Skin contact	Liquid may irritate skin. Not a skin sensitizer.
Eye contact	Spray and vapor in the eyes may cause irritation and smarting.
Health Warnings	Known or suspected mutagen. Known or suspected carcinogen for humans.
Route of entry	Ingestion. Skin and/or eye contact.
Toxicological information on ingredients	3,3'-diaminobenzidine

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity There are no data on the ecotoxicity of this product.

12.1. Toxicity

Acute Toxicity – Fish Not determined

12.2. Persistence and degradability

Degradability There are no data on the degradability of this product. This product is expected to be not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation. The product does not contain any substances expected to be bioaccumulating.

Partition coefficient Not determined

12.4. Mobility in soil

Mobility: The product is soluble in water.

General Notes: Water Hazard Class 1 (self-assessment): slightly hazardous for water

12.5. Results of PBT and vPvB assessment

Not expected to be PBT or vPvB

12.6. Other adverse effects

Not determined

SECTION 13: DISPOSAL CONSIDERATIONS

General information Waste is classified as hazardous waste. Disposal to licensed waste disposal site in accordance with the local Waste Disposal Authority.

13.1. Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements.

DAB (3,3'-diaminobenzidine) Chromogen and DAB Buffer Solution Safety Data Sheet

SECTION 14: TRANSPORTATION INFORMATION

General	The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).
Road Transport Notes	Not Classified
Rail Transport Notes	Not classified
Sea Transport Notes	Not classified
Air Transport Notes	Not classified

14.1. UN number

ADR ADN, DOT, IMDG, IATA Not dangerous goods.

14.2. UN proper shipping name

ADR ADN, DOT, IMDG, IATA Not dangerous goods.

14.3. Transport hazard class(es)

ADR ADN, DOT, IMDG, IATA Class(es) Not dangerous goods.

14.4. Packing group

ADR ADN, DOT, IMDG, IATA Not dangerous goods.

14.5. Environmental hazards

Environmentally Hazardous Substance/Marine Pollutant: Not applicable.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

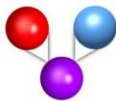
Approved Code of Practice	Classification and Labeling of Substances and Preparations Dangerous for Supply. Safety Data Sheets for Substances and Preparations.
Guidance Notes	Workplace Exposure Limits EH40.

EU Legislation

Regulation (EU) No 453/2010 of 20 May 2010 Annex II and Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, and amending Regulation (EC) No 1907/2006 with amendments.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

SARA 302 Components



69 Santa Felicia Drive, Santa Barbara, CA 93117, USA

DAB (3,3'-diaminobenzidine) Chromogen and DAB Buffer Solution

Safety Data Sheet

This material does not contain any chemical components with known CAS numbers that exceed the threshold (DeMinimus) reporting levels established by SARA Title III, Section 302.

SARA 313 Components

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

Extremely hazardous Substances; Section 355

None of the components in the mixture are listed.

Toxic substances control Act; TSCA

All of the components in this mixture are listed.

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.

SDS 0006, Rev. C, DCN: 3778

Page 9 of 9

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

General information	Only trained personnel should use this material.
SDS No.: S0006	Revision C
Date:	04/18/2019

Hazard Statements In Full

H350	May cause cancer.
H341	Suspected of causing genetic defects.

Disclaimer

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy him or herself as to the suitability of such information for his own particular use.

Bio SB shall not be held responsible for any damage resulting from the use of the above product or the information contained in this safety datasheet.

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