

# Methyl violet 2B

sc-206052

Material Safety Data Sheet



The Power to Question

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

Methyl violet 2B

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

### EMERGENCY:

ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### SYNONYMS

"C.I. Basic Violet K", "C.I. 42535", "microscopy stain", indicator, "pH indicator", "methyl violet 2B", "methyl violet 6B", "methyl violet FN", "Aizen Methyl Violet", "Basonyl Violet 600", "C. Ext. Violet 5", "Flexo Violet 600", "Gentian Violet B", "Paris Violet R", "Pykotanin Blue", "Pykotaninum Coeruleum", "Violet Powder H-2503", "triphenylmethane dye"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

|               |   | Min | Max |
|---------------|---|-----|-----|
| Flammability: | 1 |     |     |
| Toxicity:     | 2 |     |     |
| Body Contact: | 2 |     |     |
| Reactivity:   | 1 |     |     |
| Chronic:      | 2 |     |     |

Min/Nil=0  
Low=1  
Moderate=2  
High=3  
Extreme=4



### CANADIAN WHMIS SYMBOLS



## EMERGENCY OVERVIEW

### RISK

Harmful if swallowed.

Limited evidence of a carcinogenic effect.

Irritating to eyes, respiratory system and skin.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

■ Limited evidence exists that the substance may cause irreversible but non-lethal mutagenic effects following a single exposure.

##### EYE

■ This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.

■ Injury produced by cationic dyes range from conjunctival oedema, hyperaemia and purulent (pus) discharge to total opacification and necrosis and sloughing of the corneal stratum. The typical course, following exposure of rabbit eyes to toxic quantities of cationic dyes, is an initial staining of the eye that persists even after attempts to wash it away. The stain disappears spontaneously within a day and the cornea becomes translucent, greyish and only slightly tinted. Opacity may increase, and the cornea may soften over the following 14 days, greatly bulging and weakened; sometimes necrosis occurs with sloughing. Permanent opacification from vascularisation and scarring occurs in most cases.

##### SKIN

■ The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

##### INHALED

■ The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

■ Limited evidence exists that the substance may cause irreversible but non-lethal mutagenic effects following a single exposure.

#### CHRONIC HEALTH EFFECTS

■ There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment.

Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Exposure to the material may result in a possible risk of irreversible effects. The material may produce mutagenic effects in man. This concern is raised, generally, on the basis of appropriate studies with similar materials using mammalian somatic cells in vivo. Such findings are often supported by positive results from in vitro mutagenicity studies.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

<p>.

When administered orally in the diet, Michler's ketone induced increased incidences of hepatocellular carcinomas in rats and mice of both sexes and in female mice and hemangiosarcomas (primarily subcutaneous) in male mice.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME                                                | CAS RN    | %       |
|-----------------------------------------------------|-----------|---------|
| Methyl Violet indicator, as                         |           |         |
| C.I. Basic Violet 1                                 | 8004-87-3 | >60     |
| commercial product may contain                      |           |         |
| <a href="#">4,4'-bis(dimethylamino)benzophenone</a> | 90-94-8   | 0.5-0.9 |

## Section 4 - FIRST AID MEASURES

### SWALLOWED

· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

### EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

### SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

### INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

### NOTES TO PHYSICIAN

■ for poisons (where specific treatment regime is absent):

-----BASIC TREATMENT

· Establish a patent airway with suction where necessary.  
· Watch for signs of respiratory insufficiency and assist ventilation as necessary.  
Treat symptomatically.

## Section 5 - FIRE FIGHTING MEASURES

|                             |                 |
|-----------------------------|-----------------|
| Vapour Pressure (mmHG):     | Not applicable. |
| Upper Explosive Limit (%):  | Not available.  |
| Specific Gravity (water=1): | 1.17            |
| Lower Explosive Limit (%):  | Not available.  |

### EXTINGUISHING MEDIA

· Water spray or fog.  
· Foam.

### FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.  
· Wear breathing apparatus plus protective gloves.  
When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

### GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

· Combustible solid which burns but propagates flame with difficulty.  
· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.  
Combustion products include: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>), other pyrolysis products typical of burning organic material.

### FIRE INCOMPATIBILITY

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

### PERSONAL PROTECTION

Glasses:  
Safety Glasses.  
Chemical goggles.  
Gloves:  
Respirator:  
Particulate

## Section 6 - ACCIDENTAL RELEASE MEASURES

### MINOR SPILLS

· Remove all ignition sources.  
· Clean up all spills immediately.  
· Avoid contact with skin and eyes.

- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

Environmental hazard - contain spillage.

#### MAJOR SPILLS

- Environmental hazard - contain spillage.

Moderate hazard.

- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
  - Wear protective clothing when risk of exposure occurs.
- Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
- Do NOT cut, drill, grind or weld such containers.
  - In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

### RECOMMENDED STORAGE METHODS

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

### STORAGE REQUIREMENTS

- Observe manufacturer's storing and handling recommendations.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

| Source                                                                           | Material                                                                                 | TWA ppm | TWA mg/m <sup>3</sup> | STEL ppm | STEL mg/m <sup>3</sup> | Peak ppm | Peak mg/m <sup>3</sup> | TWA F/CC | Notes                               |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------|-----------------------|----------|------------------------|----------|------------------------|----------|-------------------------------------|
| US - California Permissible Exposure Limits for Chemical Contaminants            | C.I. Basic Violet 1 (Particulates not otherwise regulated Respirable fraction)           |         | 5                     |          |                        |          |                        |          | (n)                                 |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants        | C.I. Basic Violet 1 (Particulates not otherwise regulated Respirable fraction)           |         | 5                     |          |                        |          |                        |          |                                     |
| US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants | C.I. Basic Violet 1 (Particulates not otherwise regulated (PNOR)(f)-Respirable fraction) |         | 5                     |          |                        |          |                        |          |                                     |
| US - Michigan Exposure Limits for Air Contaminants                               | C.I. Basic Violet 1 (Particulates not otherwise regulated, Respirable dust)              |         | 5                     |          |                        |          |                        |          |                                     |
| Canada - Prince Edward Island Occupational Exposure Limits                       | C.I. Basic Violet 1 (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)  |         | 10                    |          |                        |          |                        |          | See Appendix B current TLV/BEI Book |

ENDOELTABLE

## PERSONAL PROTECTION



### RESPIRATOR

Particulate

Consult your EHS staff for recommendations

### EYE

- Safety glasses with side shields.
- Chemical goggles.

### HANDS/FEET

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocarbon
- polyvinyl chloride

Gloves should be examined for wear and/or degradation constantly.

### OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

### ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Solid.

Mixes with water.

|                           |                |                                |                 |
|---------------------------|----------------|--------------------------------|-----------------|
| State                     | Divided solid  | Molecular Weight               | Not available.  |
| Melting Range (°F)        | 140- 158       | Viscosity                      | Not Applicable  |
| Boiling Range (°F)        | Not available. | Solubility in water (g/L)      | Miscible        |
| Flash Point (°F)          | Not available  | pH (1% solution)               | 3 (1% ethanol)  |
| Decomposition Temp (°F)   | Not Available  | pH (as supplied)               | Not applicable  |
| Autoignition Temp (°F)    | Not available. | Vapour Pressure (mmHG)         | Not applicable. |
| Upper Explosive Limit (%) | Not available. | Specific Gravity (water=1)     | 1.17            |
| Lower Explosive Limit (%) | Not available. | Relative Vapor Density (air=1) | >1              |

|                           |                 |                  |                |
|---------------------------|-----------------|------------------|----------------|
| Volatile Component (%vol) | <8 @ 110 deg C. | Evaporation Rate | Not applicable |
|---------------------------|-----------------|------------------|----------------|

## APPEARANCE

Dark coloured powder. No odour. Sparingly soluble in water. Aqueous solution, 0.05%, changes yellow to blue at pH range 0.0-1.6.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

### STORAGE INCOMPATIBILITY

- Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

C.I. BASIC VIOLET 1

### TOXICITY AND IRRITATION

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

C.I. BASIC VIOLET 1:

| TOXICITY                                                     | IRRITATION                 |
|--------------------------------------------------------------|----------------------------|
| Oral (rat) LD50: 413 mg/kg                                   | Eye (rabbit): irritating * |
| Oral (mouse) LD50: 105 mg/kg                                 |                            |
| * BASF Canada                                                |                            |
| Oral (rat) LD50: 460-680 mg/kg * Skin (rabbit): irritating * |                            |
| Oral (rat) TDLo: 1663 mg/kg/17W-I                            |                            |
| Inhalation (rat) TCLo: 110 mg/m <sup>3</sup> /2h/44d-I       |                            |
| * BASF Canada                                                |                            |
| * BASF Canada                                                |                            |
|                                                              | * BASF Canada              |
|                                                              | * BASF Canada              |
|                                                              | * BASF Canada              |
|                                                              | * BASF Canada              |
|                                                              | * BASF Canada              |
|                                                              | * BASF Canada              |

| TOXICITY | IRRITATION |
|----------|------------|
|----------|------------|

### 4,4'-BIS(DIMETHYLAMINO)BENZOPHENONE:

|                            |              |
|----------------------------|--------------|
| Oral (bwd) LD50: 100 mg/kg | Nil Reported |
|----------------------------|--------------|

- Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen

[National Toxicology Program: U.S. Dep. of Health & Human Services 2002].

### CARCINOGEN

|                  |                                                                             |              |     |
|------------------|-----------------------------------------------------------------------------|--------------|-----|
| MICHLER'S KETONE | US Environmental Defense Scorecard Recognized Carcinogens                   | Reference(s) | P65 |
| MICHLER'S KETONE | US Environmental Defense Scorecard Suspected Carcinogens                    | Reference(s) | P65 |
| Michler's ketone | US Air Toxics Hot Spots TSD for Describing Available Cancer Potency Factors | IARC Class   | NC  |

## Section 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

This material and its container must be disposed of as hazardous waste.

Avoid release to the environment.

Refer to special instructions/ safety data sheets.

### Ecotoxicity

| Ingredient                          | Persistence:<br>Water/Soil | Persistence:<br>Air | Bioaccumulation | Mobility |
|-------------------------------------|----------------------------|---------------------|-----------------|----------|
| 4,4'-bis(dimethylamino)benzophenone | LOW                        | LOW                 | LOW             | MED      |

## Section 13 - DISPOSAL CONSIDERATIONS

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

! Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

## Section 14 - TRANSPORTATION INFORMATION



DOT:

Symbols: G Hazard class or Division: 9

Identification Numbers: UN3077 PG: III

Label Codes: 9 Special provisions: 8, 146,

335, B54,

IB8, IP3,

N20, T1,

TP33

Packaging: Exceptions: 155 Packaging: Non- bulk: 213

Packaging: Exceptions: 155 Quantity limitations: No limit

Passenger aircraft/rail:

Quantity Limitations: Cargo No limit Vessel stowage: Location: A aircraft only:

Vessel stowage: Other: None

Hazardous materials descriptions and proper shipping names:

Environmentally hazardous substance, solid, n.o.s

### Air Transport IATA:

ICAO/IATA Class: 9 ICAO/IATA Subrisk: None

UN/ID Number: 3077 Packing Group: III

Special provisions: A97

Cargo Only

Packing Instructions: 911 Maximum Qty/Pack: 400 kg

Passenger and Cargo Passenger and Cargo

Packing Instructions: 911 Maximum Qty/Pack: 400 kg

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: Y911 Maximum Qty/Pack: 30 kg G

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. \*(CONTAINS C.I. BASIC VIOLET 1)

### Maritime Transport IMDG:

IMDG Class: 9 IMDG Subrisk: None

UN Number: 3077 Packing Group: III  
EMS Number: F-A , S-F Special provisions: 179 274 335 909  
Limited Quantities: 5 kg Marine Pollutant: Yes  
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

## Section 15 - REGULATORY INFORMATION

### **C.I. Basic Violet 1 (CAS: 8004-87-3) is found on the following regulatory lists;**

"Canada Domestic Substances List (DSL)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "US Toxic Substances Control Act (TSCA) - Inventory"

### **Regulations for ingredients**

### **4,4'-bis(dimethylamino)benzophenone (CAS: 90-94-8) is found on the following regulatory lists;**

"Canada Domestic Substances List (DSL)", "Canada Ingredient Disclosure List (SOR/88-64)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "International Chemical Secretariat (ChemSec) REACH SIN\* List (\*Substitute It Now!) 1.0", "US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified", "US - California Proposition 65 - Carcinogens", "US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens", "US - California Toxic Air Contaminant List Category II", "US - Connecticut Hazardous Air Pollutants", "US - Maine Chemicals of High Concern List", "US - Minnesota Hazardous Substance List", "US - New Jersey Right to Know Hazardous Substances", "US - Pennsylvania - Hazardous Substance List", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US EPCRA Section 313 Chemical List", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act", "US National Toxicology Program (NTP) 11th Report Part B. Reasonably Anticipated to be a Human Carcinogen", "US Toxic Substances Control Act (TSCA) - Inventory"

## Section 16 - OTHER INFORMATION

*Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.*

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references).

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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