SAFETY DATA SHEET

Methylene Blue

Section 1. Identification		
1.1 Product identifier		
Product name	: Methylene Blue	
Part no.	: AR162	
Validation date	: 1/17/2022	
1.2 Relevant identified uses	of the substance or mixture and uses advised against	
Material uses	: Laboratory use Container type: Dispenser Pack AR162 // Methylene Blue // Artisan Acid-Fast Bacillus Stain Kit // 65 mL and 115 mL Reference number: SDS038	
1.3 Details of the supplier o	<u>f the safety data sheet</u>	
Supplier/Manufacturer	 Agilent Technologies, Inc. 5301 Stevens Creek Blvd Santa Clara, CA 95051, USA Tel: +1 800 227 9770 Agilent Technologies Singapore (International) Pte Ltd. No. 1 Yishun Avenue 7 Singapore, 768923 Tel. (65) 6276 2622 Agilent Technologies Denmark ApS Produktionsvej 42 2600 Glostrup, Denmark Tel. +45 44 85 95 00 www.Agilent.com 	
e-mail address of person responsible for this SDS	: SDS@Agilent.com	
1.4 Emergency telephone n	umber	
In case of emergency	CUENTREC®: 1 900 424 0200	

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the subs	stance or mixture		
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).		
Classification of the substance or mixture			
⊮ 317	SKIN SENSITIZATION - Category 1		
	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1%		

2.2 GHS label elements



Section 2. Hazards identification

Hazard pictograms	
Signal word	: Warning
Hazard statements	: H317 - May cause an allergic skin reaction.
Precautionary statements	
Prevention	 ₽280 - Wear protective gloves. P261 - Avoid breathing vapor.
Response	 ▶363 - Wash contaminated clothing before reuse. ▶302 + ₱352 - IF ON SKIN: Wash with plenty of water. ₱333 + ₱313 - If skin irritation or rash occurs: Get medical advice or attention.
Storage	: Not applicable.
Disposal	F501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
2.3 Other hazards	
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Ingredient name	%	CAS number
Phenothiazin-5-ium, 3,7-bis(dimethylamino)-, chloride, hydrate (1:1:3) 5-Chloro-2-methyl-3(2H)-isothiazolone mixt. with 2-methyl-3(2H)- isothiazolone	≤3 <0.0025	7220-79-3 55965-84-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact	: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
Inhalation	: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Section 4. Thist a	
Ingestion	: Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
4.2 Most important sympton	ms/effects, acute and delayed
Potential acute health effe	<u>cts</u>
Eye contact	: No known significant effects or critical hazards.
Inhalation	: No known significant effects or critical hazards.
Skin contact	: May cause an allergic skin reaction.
Ingestion	: No known significant effects or critical hazards.
Over-exposure signs/sym	<u>ptoms</u>
Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.
4.3 Indication of immediate	medical attention and special treatment needed, if necessary
Notes to physician	 In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media		
Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.	
Unsuitable extinguishing media	: None known.	
5.2 Special hazards arising	om the substance or mixture	
Specific hazards arising from the chemical	: In a fire or if heated, a pressure increase will occur and the container may burst.	
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds	

5.3 Advice for firefighters

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Section 5. Fire-fighting measures

Special protective actions for fire-fighters	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures			
For non-emergency personnel		No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.	
For emergency responders	:	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".	
6.2 Environmental precautions		Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).	
6.3 Methods and materials for containment and cleaning up			
Methods for cleaning up		Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.	

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures	: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in whi this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative n from a compatible material, kept tightly closed when not in use. Empty containers is product residue and can be hazardous. Do not reuse container.	d nade
Advice on general occupational hygiene	 Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eatin drinking and smoking. Remove contaminated clothing and protective equipment be entering eating areas. See also Section 8 for additional information on hygiene measures. 	
7.2 Conditions for safe storage, including any incompatibilities	: Specific storage conditions: Please consult the label. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible mater (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and k upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.	rials I cept
7.3 Specific end use(s)		
Recommendations	: Industrial applications, Professional applications.	
Industrial sector specific solutions	: Not available.	
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Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Phenothiazin-5-ium, 3,7-bis(dimethylamino)-, chloride, hydrate (1:1:3) 5-Chloro-2-methyl-3(2H)-isothiazolone mixt. with 2-methyl-3(2H)- isothiazolone	None. None.

8.2 Exposure controls	
Appropriate engineering controls	: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Individual protection measure	<u>S</u>
Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
Skin protection	
Hand protection	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance	
Physical state	: Liquid.
Color	: Blue.
Odor	: Odorless.
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Section 9. Physical and chemical properties and safety characteristics

Odor threshold	: Not ava	ilable.						
рН	: 7							
Melting point/freezing point	: 0°C (32	°F)						
Boiling point, initial boiling point, and boiling range	: 100°C (212°F)						
Flash point	:		C	losed c	up		Oper	n cup
	Ingred	ient name	°C	°F	Method	°C	°F	Method
	Propane	-1,2-diol	99	210.2				
Evaporation rate	: Not ava	ilable.						
Flammability	: Not app	licable.						
Lower and upper explosion limit/flammability limit	: Not ava	ilable.						
Vapor pressure	:		Vapo	r Press	ure at 20°C	Va	por press	sure at 50°C
	Ingred	lient name	mm Hg	kPa	Method	mm Hg	kPa	Method
	Water		23.8	3.2		92.258	12.3	
			1.6	0.21				
Relative vapor density	: Not ava	ilable.					-	·
Relative density	: Not ava	ilable.						
Solubility	: Soluble	in the followin	g material	s: cold v	vater and ho	t water.		
Miscible with water	: Yes.							
Partition coefficient: n- octanol/water	: Not app	licable.						
Auto-ignition temperature	: Ingred	ient name		°C	°F		Method	
	Propane	-1,2-diol		371	699.8	3		
Decomposition temperature	: Not ava	ilable.		_1	I	l		
Viscosity	: Not ava	ilable.						
Particle characteristics								
Median particle size	: Not app	licable.						
Section 10. Stabili	ty and	reactivit	у					
10.1 Reactivity	: No spe	cific test data r	elated to r	eactivity	available fo	r this produ	ict or its in	gredients.
10.2 Chemical stability	: The pro	The product is stable.						
10.3 Possibility of hazardous reactions	: Under r	normal conditio	ons of stora	age and	use, hazard	ous reactic	ons will not	t occur.

- **10.4 Conditions to avoid** : No specific data.
- **10.5 Incompatible materials** : May react or be incompatible with oxidizing materials.

Section 10. Stability and reactivity

10.6 Hazardous

decomposition products

: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
5-Chloro-2-methyl-3(2H)- isothiazolone mixt. with 2-methyl-3(2H)-isothiazolone	LC50 Inhalation Vapor	Rat	0.33 mg/l	4 hours
	LD50 Dermal LD50 Oral		87.12 mg/kg 53 mg/kg	-

Irritation/Corrosion

Not available.

Sensitization

Not available.

Conclusion/Summary

÷.	May cause s	skin	sensitization.
•	may cause s		Scholization.

Mutagenicity

Skin

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Phenothiazin-5-ium, 3,7-bis (dimethylamino)-, chloride, hydrate (1:1:3)	-	3	-

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name		Route of exposure	Target organs
Phenothiazin-5-ium, 3,7-bis(dimethylamino)-, chloride, hydrate (1:1:3)	Category 3		Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely : Routes of entry anticipated: Oral, Dermal, Inhalation.

routes of exposure

Potential acute health effects

Eye contact	: No known significant effects or critical hazards.
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Inhalation : No known significant effects or critical hazards.

Section 11. Toxicological information

Skin contact	: May cause an allergic skin reaction.
Ingestion	: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: No specific data.
Inhalation	: No specific data.
Skin contact	: Adverse symptoms may include the following: irritation redness
Ingestion	: No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure Short term exposure **Potential immediate** : Not available. effects Potential delayed effects : Not available. Long term exposure **Potential immediate** : Not available. effects **Potential delayed effects** : Not available. Potential chronic health effects General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. Carcinogenicity : No known significant effects or critical hazards. **Mutagenicity** : No known significant effects or critical hazards. : No known significant effects or critical hazards. **Reproductive toxicity**

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/ kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/ I)
Methylene Blue	50000	N/A	N/A	N/A	N/A
Phenothiazin-5-ium, 3,7-bis(dimethylamino)-, chloride, hydrate (1:1:3)	500	N/A	N/A	N/A	N/A
5-Chloro-2-methyl-3(2H)-isothiazolone mixt. with 2-methyl-3(2H)-isothiazolone	53	87.12	N/A	0.5	N/A

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
5-Chloro-2-methyl-3(2H)- isothiazolone mixt. with 2-methyl-3(2H)-isothiazolone	Acute LC50 0.16 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 0.19 mg/l Fresh water Chronic NOEC >0.0464 mg/l Fresh water	Fish Fish	96 hours 96 hours

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Section 12. Ecological information

12.2 Persistence and degradability

Product/ingredient name	Test	Result		Dose		Inoculum
5-Chloro-2-methyl-3(2H)- isothiazolone mixt. with 2-methyl-3(2H)-isothiazolone	OECD 301B Ready Biodegradability - CO ₂ Evolution Test	62 % - Rea	dily - 28 days	-		-
Product/ingredient name	Aquatic half-life		Photolysis		Biodeg	radability
5-Chloro-2-methyl-3(2H)- isothiazolone mixt. with 2-methyl-3(2H)-isothiazolone	-		-		Readily	

12.3 Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
5-Chloro-2-methyl-3(2H)- isothiazolone mixt. with 2-methyl-3(2H)-isothiazolone	0.326	-	low

12.4 Mobility in soil

Soil/water partition	: Not available.
coefficient (Koc)	

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods	
Disposal methods :	The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

DOT / TDG / Mexico / IMDG / : Not regulated. ΙΑΤΑ

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according : Not available. to IMO instruments

Section 15. Regulatory information

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15.1 Safety, health and envir	onmental regulations/legislation specific for the substance or mixture
U.S. Federal regulations	: TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	: Not listed
Clean Air Act Section 602 Class I Substances	: Not listed
Clean Air Act Section 602 Class II Substances	: Not listed
DEA List I Chemicals (Precursor Chemicals)	: Not listed
DEA List II Chemicals (Essential Chemicals)	: Not listed
<u>SARA 302/304</u>	
Composition/information	on ingredients
No products were found.	

SARA 304 RQ : Not applicable.

SARA 311/312

Classification

: SKIN SENSITIZATION - Category 1

Composition/information on ingredients

Name	%	Classification
Phenothiazin-5-ium, 3,7-bis (dimethylamino)-, chloride, hydrate (1:1:3)	≤3	COMBUSTIBLE DUSTS ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
5-Chloro-2-methyl-3(2H)- isothiazolone mixt. with 2-methyl- 3(2H)-isothiazolone	<0.0025	ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 2 SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1A HNOC - Corrosive to digestive tract

State regulations	
Massachusetts	: None of the components are listed.
New York	None of the components are listed.
New Jersey	: None of the components are listed.
Pennsylvania	: None of the components are listed.

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Section 15. Regulatory information

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants Not listed.

Rotterdam Convention on Prior Informed Consent (PIC) Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Europe	: Not determined.
Japan	: Japan inventory (CSCL): Not determined. Japan inventory (ISHL): Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: Not determined.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: Not determined.

Section 16. Other information

Procedure used to derive the classification

	Justification	
SKIN SENSITIZATION - Category 1 Calculation		Calculation method
History		
Date of issue	: 01/17/2022	
Date of previous issue	: 06/30/2020	
Version	: 5	
Key to abbreviations	 5 ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Internediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) 	

Section 16. Other information

N/A = Not available UN = United Nations

✓ Indicates information that has changed from previously issued version.

Notice to reader

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