Spore Strips (Steam Sterilization Monitor Strips)

DD032

Steam Sterilization Monitor Strips are used for evaluating sterilization process. These indicators which are specified by the U.S. military specification MIL-S- 36586 are GMP requirements of U.S. FDA.

Directions

Place indicators in the areas of the pack or load least accessible to steam. Places such as the geometrical center, and the upper and lower regions of both front and rear of the load to be sterilized are considered suitable areas for placement of these indicators. A standard procedure should be established for the routine evaluation of each sterilizer. On completion of the sterilization cycle, remove the indicators from the test loads and deliver them to the laboratory for testing. All sterility tests should be performed in a clean dust free transfer area, preferably under positive air pressure, using rigid aseptic technique throughout the test procedure.

Using sterile scissors, cut open one end of the envelope. Thereafter remove the indicator with sterile tweezers and aseptically transfer it to a tube of sterile Soyabean Casein Digest Medium w/ Yeast Extract and Ferric pyrophosphate (M207) or Soyabean Casein Digest Medium (M011). Incubate the tubes for seven days at 55 - 60°C. Observe the tubes daily. If turbidity develops, failure of the sterilization process is indicated.

Precautions

The spore strips or broth cultures of *Bacillus stearothermophilus* must be autoclaved at 121°C for at least 30 minutes prior to discarding.

Each spore strip is individually packaged in a steam-permeable envelope.

Principle And Interpretation

Bacillus stearothermophilus is a thermophilic bacteria which can grow at 65°C and above. The spores are highly heat resistant and are used to monitor autoclave performance (1).

Sterilisation is the freeing of an article from all living organisms including viable spores(1). Sterilization quality control can only be achieved through the use of calibrated biological indicators (endospores). These indicators consist of *Bacillus stearothermophilus* spores impregnated on chromatography paper strips, individually placed into envelopes. Number of spores present per strip : 10^6. These organisms are difficult to destroy because they are more resistant to heat than other vegetative bacteria and viruses. Therefore, if they are destroyed during sterilization,it is assumed that all other life forms are also destroyed. This test is considered the most sensitive check of the autoclaves efficiency.

Precautions :

The spore strips or broth cultures of *Bacillus stearothermophilus* must be autoclaved at 121°C for at least 30 minutes prior to discarding.

Each spore strip is individually packaged in a steam-permeable envelope.

Quality Control

Appearance
Filter paper strip impregnated with spores of standard culture of B.stearothermophilus

Number of spores
1000000 spores/strip

Cultural response
Sterility checking of the autoclave was carried out using Spore strip. After autoclaving, strip was inoculated in 100ml of st. Soyabean Casein Digest Medium(M011) and incubated at 55°C upto 7 days. An unexposed spore strip was also inoculated separately in 100ml M011

Growth	Unexposed Spore Strip	Exposed Spore Strip	Positive control	Negative control
Growth in M011	Luxuriant	No growth	Luxuriant	No growth

Storage and Shelf Life

Store at 2 - 8°C. Use before expiry date on the label.

Reference

1.Mackie and McCartney, 1996, Practical Medical Microbiology, 14th ed., Vol. 2, Collee J. G., Fraser A. G., Marmion B, P., Simmons A (Eds.), Churchill Livingstone, Edinburgh.

Revision : 1 / 2011

Product Information

GRM903 Auramine, Practical grade

Product Number		Packing
GRM903	:	100G
GRM903	:	25G

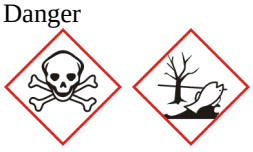
Product Information

Product Code	:	GRM903
Product Name	:	Auramine, Practical grade
Synonym	:	Auramine O; Basic Yellow 2
Molecular Formula	:	$C_{17}H_{21}N_3$.HCl
Molecular Weight	:	303.83
CAS No.	:	2465-27-2
EC No.	:	219-567-2
HS Code	:	3212 90 00
Colour Index No.	:	41000
Shelf Life	:	3 years

Technical Specification

Appearance	:	Yellow to yellow-green or gold powder
Solubility	:	6 ppm solution in water yields clear yellow to dark-yellow solution
FTIR (KBr disc)	:	Matches with the standard pattern
Absorption maxima 1	:	249 - 255 nm (6 ppm in water)
Absorption maxima 2	:	367 - 373 nm (6 ppm in water)
Absorption maxima 3	:	429 - 435 nm (6 ppm in water)
Loss on drying (at 105°C; 2 hr)	:	<= 10.00%

GHS Safety Information

Hazard Statement(s)	:	H302-H311-H351
Precautionary Statement(s)	:	P280-P312
Signal Word	:	Danger
Hazard Pictogram(s)		

Risk and Safety Information

R-Phrase(s)	:	22-24-40
S-Phrase(s)	:	36/37-45
WGK	:	3
RTECS	:	BY3675000
Storage Temperature(°C)	:	Store below 30°C
Hazard Symbol(s)		

A-516, Swastik Disha Business Park, Via Vadhani Indl. Est., LBS Marg, Mumbai-400 086, India. Phone:+91-022-6147 1919
Fax:+91-022-6147 1920 Gram : STERILITY . email : info@himedialabs.com. Visit us at our website: www.himedialabs.com

Transport Information

UN No.	:	2811
Class	:	6.1
Packaging Group	:	3
Marine Pollutant	:	No
ADR/RID	:	2811 6.1/PG 3
IMDG	:	2811 6.1/PG 3
IATA	:	2811 6.1/PG 3

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Product Information

RM952 Malachite green, Oxalate, Practical Grad

Product Number		Packing
RM952	:	100G
RM952	:	25G

Product Information

Product Code	:	RM952
Product Name	:	Malachite green, Oxalate, Practical Grad
Synonym	:	Basic green 4
Molecular Weight	:	927.00
CAS No.	:	2437-29-8
EC No.	:	219-441-7
HS Code	:	3212 90 00
Colour Index No.	:	42000
Shelf Life	:	4 years

Technical Specification

Appearance	:	Green crystals or crystalline powder with metallic luster.
Solubility	:	Soluble in water.
Visual pH transition (at 25°C)	:	pH 0.0 (yellow) to pH 2.0 (green)
Absorption maximum	:	616-620 nm (20 ppm in water)
FTIR (KBr disc)	:	Matches with the standard pattern

GHS Safety Information

Hazard Statement(s)	:	H302-H318-H361-H410
Precautionary Statement(s)	:	P273-P280-P305 + P351 + P338-P501
Signal Word	:	Danger
Hazard Pictogram(s)		

Risk and Safety Information

R-Phrase(s)	:	22-41-50/53-63
S-Phrase(s)	:	26-36/37/39-46-60-61
WGK	:	3
Storage Temperature(°C)	:	Store below 30°C
Hazard Symbol(s)		

Transport Information

UN No.	:	2811
Class	:	6.1
Packaging Group	:	3

ADR/RID	:	2811 6.1/PG 3
IMDG	:	2811 6.1/PG 3
IATA	:	2811 6.1/PG 3

HIMEDIA

Product Information

MB060 Glycerol, For Molecular Biology

Product Number		Packing
MB060	:	500ML

Product Information

Product Code	:	MB060
Product Name	:	Glycerol, For Molecular Biology
Synonym	:	1,2,3-Propanetriol
Molecular Formula	:	$C_3H_8O_3$
Molecular Weight	:	92.09
CAS No.	:	56-81-5
EC No.	:	200-289-5
HS Code	:	2905 45 00
Shelf Life	:	4 years

Technical Specification

Appearance	:	Colourless viscous liquid
Solubility	:	1 mL miscible with 1 mL of water
pH (5M in water at 25°c)	:	5.50 - 8.00
DNases	:	None detected
RNases	:	None detected
Refractive index (n 20/D)	:	~1.474
Density (at 20°C)	:	1.255 - 1.265 g/mL
Heavy metals (as Pb)	:	<= 0.0005 %
Iron (Fe)	:	<= 0.000 5%
Magnesium (Mg)	:	<= 0.0005 %
Assay (GC/NaOH Titration)	:	min. 99.50 %

Risk and Safety Information

WGK	:	1
RTECS	:	MA8050000
Flash Point(°F)	:	320 °F
Flash Point(°C)	:	160 °C
Storage Temperature(°C)	:	Store below 30°C

Transport Information

Marine Pollutant	:	No
ADR/RID	:	Not Dangerous Goods
IMDG	:	Not Dangerous Goods
IATA	:	Not Dangerous Goods

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Lysozyme, From Chicken egg white, For Molecular Biology

MB098

Product Identifier

CAS No.	:	12650-88-3
EC No.	:	235-747-3
Molecular Weight	:	~ 14600 Daltons
Synonym	:	Muramidase
HS Code	:	3507 90 99
Storage	:	On receipt store at -20°C
Shelf life	:	4 years

Technical Specification

Appearance	:	White to off-white lyophilized powder or solid
Solubility	:	33.3 mg soluble in 1 mL of water
DNases	:	None detected
RNases	:	None detected
Activity	:	>= 30,000 U/mg (*Micrococcus lysodeikticus*; pH 6.24, 25°C)
Unit definition	:	1 U will produce a change in absorbance at 450 nm by 0.001 per minute at pH 6.24 and 25°C using a suspension of *Micrococcus lysodeikticus* as substrate in a 2.6 mL reaction mixture (1 cm light path)

Safety Information

UN No.	:	Not dangerous goods
Class	:	-
Packing Group	:	-
RTECS	:	OL5989000
WGK	:	3

McFarland Standard set **R092**

McFarland standards are used to perform spectrophotometric comparisions of bacterial densities in water, saline or liquid growth medium. It provides laboratory guidance for the standardization of numbers of bacteria for susceptibility testing or other procedure requiring a standardization of the inoculum like growth promotion test (GPT).

Set Contains:

R092A (Standard 0.5)- 1 tube

R092B (Standard 1)-1 tube

R092C (Standard 2)- 1 tube

R092D (Standard 3)- 1 tube

R092E (Standard 4)- 1 tube

Directions

Prepare the inoculum of culture required for testing by using sterile saline. Match the density of the resultant suspension with the density of the desired standard. The standards must be thoroughly mixed on a vortex mixture at the time of use to obtain a uniform suspension. Adjust the density of cell suspension by adding saline if it is more turbid as compared to the desired standard or by adding culture if it is dilute. Check the density of the turbidity by determining the absorbance of 0.5 McFarland standard using a spectrophotometer with a 1 cm light path. The absorbance at 625 nm should be 0.08 to 0.10. The standards should be checked regularly to ensure the density accuracy.

Interpretation

McFarland standards are a set of tubes with increasing concentration of Barium Sulphate suspension. The turbidity of Barium Sulphate's white precipitation is used as a point of comparision of bacterial suspensions to known bacterial turbidity.

McFarland Standard	0.5	1	2	3	4
Approximate Corresponding suspension x 10^8 CFU/ml	1.5	3	6	9	12

Limitation of procedure

1. Coloured media may interfere with result interpretation and give incorrect results.

2. Bacterial suspensions of older cultures may not be comparable with expected bacterial counts.

Storage

Store the standards at 2-8°C, away from light after each use.

Reference

1. McFarland, J.1907. Nephelometer: JAMA 14:1176-1178

2. Murry,PR; Baron,EJ; Jorgensen,JH;Landry,ML;Pfaller,MA; Manual of Clinical Microbiology 9th edition ASM press, Washington DC.

Product Information

RM3142 N-Acetyl-L-cysteine

Product Number		Packing
RM3142	:	10G
RM3142	:	25G
RM3142	:	5G

Product Information

Product Code	:	RM3142
Product Name	:	N-Acetyl-L-cysteine
Synonym	:	2-Acetamido-3-mercaptopropionic acid
Molecular Formula	:	$C_5H_9NO_3S$
Molecular Weight	:	163.19
CAS No.	:	616-91-1
EC No.	:	210-498-3
HS Code	:	2930 90 16
Shelf Life	:	4 years

Technical Specification

Appearance	:	Colorless or white to off-white crystals or powder
Solubility	:	100 mg soluble in 1 mL of water
pH (1 % in water at 25°C)	:	2.0 - 2.8
FTIR (KBr disc)	:	Matches with the standard pattern
Specific rotation	:	+21.0° to +27.0° (c = 5% in phosphate buffer pH 7)
Melting range	:	106 - 113°C
Assay (NaOH Titration/Iodimetry)	:	99.00 - 102.00%

Risk and Safety Information

WGK	:	2
RTECS	:	HA1660000
Storage Temperature(°C)	:	Store at 2 - 8°C

Transport Information

Marine Pollutant	:	No
ADR/RID	:	Not Dangerous Goods
IMDG	:	Not Dangerous Goods
IATA	:	Not Dangerous Goods

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L-Glutamic Acid monosodium, monohydrate

(From non-animal source)
Cell Culture Tested

Product Code: TC064

Product Description :

Molecular Weight: 187.13
Molecular Formula:
$NaOOCCH_2CH_2CH(NH_2)COOH \cdot H_2O$
CAS No.: 6106-04-3
Synonym: L-2-Aminopentanedioic acid, MSG, Sodium L-glutamate

L-Glutamic acid monosodium monohydrate is hydrated sodium salt of L-Glutamic acid. It is also called monosodium glutamate (MSG). L-Glutamic acid is negatively charged hydrophilic, non-essential α-amino acid coded by codons GAA and GAG. It is chemically acidic in nature.

Although it is a non-essential amino acid, it is used as a major component in wide range of cell culture media including classical and serum-free media. It resembles L-Glutamic acid in its functions with respect to cell culture systems. Some of the functions are mentioned below:

· Precursor for synthesis of L-Glutamine:
Like Glutamatic acid, monosodium glutamate is also converted to L-Glutamine with the help of enzyme Glutamine sythatase. This process is essential for normal maintenance of cells in culture. L-Glutamine produced by this process plays a very crucial role in cell culture systems as it is an essential amino acid. It participates in protein synthesis, nucleic acid synthesis, energy generation etc.

· Protein synthesis:
Similar to L-Glutamic acid, it is also one of the major building blocks of the protein synthesis.

· Nucleic acid synthesis:
It plays major role in biosynthesis of purine and pyrimidine bases of DNA and RNA.

Directions :

Preparation instructions:
L-Glutamic acid monosodium monohydrate is soluble in water. Solutions of L-Glutamic acid monosodium monohydrate cannot be autoclaved. They should be sterilized by filtering through a sterile membrane with porosity 0.22 microns.

Quality Control:

Appearance
White crystalline powder.

Solubility
Clear colorless solution at 5gm in 100ml of water .

pH of 10% solution in water
6.00 -8.00

Specific rotation [alpha]20/D
+24.8° to +25.3°

Chloride (Cl)
NMT 0.1%

Iron (Fe)
NMT 0.5%

Arsenic (As)
NMT 0.05%

Assay
NLT 99%

Cell Culture Test
Passes

Storage and Shelf Life:

Store at 10-30°C away from bright light.
Shelf life is 48 months.
Use before expiry date given on the product label.

HiMedia Laboratories Pvt. Ltd. A-516,Swastik Disha Business Park,Via Vadhani Ind. Est., LBS Marg, Mumbai-400086, India. Customer care No.: 022-6147 1919
Email: info@himedialabs.com