



LCSM Kit

Item No. 9.23552.244

1. Information

LCSM - Lin 's Cupric Sulfate Medium (pH 4.8-5.8) is used for the quantitative determination and detection of wild yeast populations in brewing culture yeast. The kit consists of a ready-to-use powder and a corresponding cupric sulfate solution for the preparation of solid LWYM agar.

Principle:

While the growth of culture yeast is suppressed by cupric sulfate, the growth of non-Saccharomyces yeast is primarily promoted and developed as larger, distinct colonies. A few Saccharomyces yeast may also grow up to a certain extent on this medium.

2. Handling

2.1 Preparation

Please work under sterile conditions after autoclaving to avoid secondary contamination of the samples.

This medium is prepared from two separate containers, using the following ingredients:

1. LCSM dehydrated powder
2. Cupric sulfate solution

The cupric sulfate concentration has been adjusted to give optimum conditions for wild yeast growth and culture yeast inhibition. It is absolutely essential to use the cupric sulfate solution, that is provided with the LCSM dehydrated powder.

Suspend 4.0 grams of LCSM in 100 ml of distilled water and add 1.0 ml of cupric sulfate solution. Heat to boiling to dissolve the medium. Swirl the flask frequently to avoid caking or scorching. Autoclave at 121°C (15 lbs. pressure) for 15 minutes to sterilize the medium. Transfer the flask to a water bath at 45°C as soon as possible after sterilization. Once cooled, it can be poured into sterile petri dishes until about 2/3 of filling height is reached. Leave dishes undisturbed so the medium can solidify.

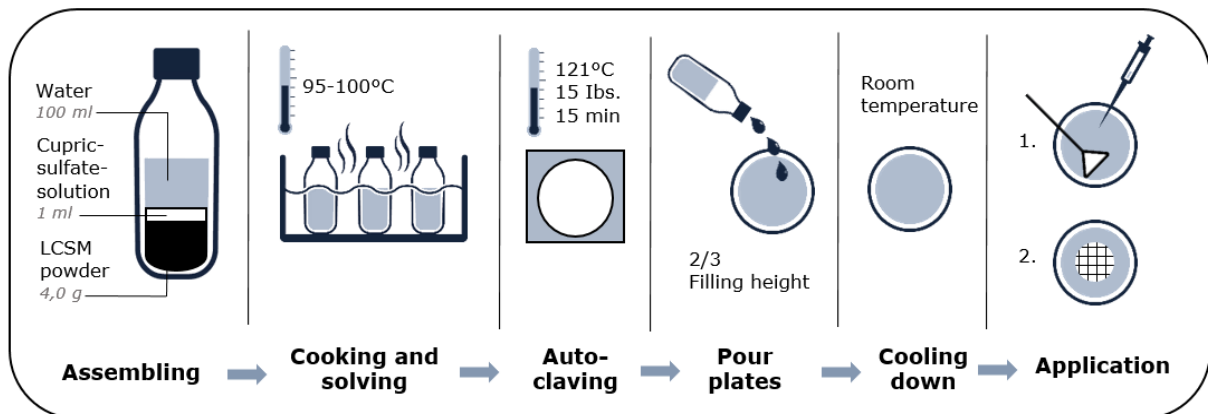
If not used immediately, poured plates can be stored in inverted position at 4°C, but must be used within 3 days after preparation because the medium will inhibit the growth of wild yeast if allowed to stand for extended periods of time.

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2.2 Application

Application is performed as follows:

1. Samples with high yeast counts (e.g. pitching yeast) are to be diluted to approximately 5 million cells/ml. Inoculate 0.2 ml diluted sample containing approximately 1 million yeast cells onto the agar. Disperse the inoculum evenly over the surface of the medium, using a sterile spreader.
2. Samples with low yeast counts are to be filtered through a non-cellulose membrane filter, followed by the filtration of 300 ml sterile water to wash and remove any extraneous material from the filter. Transfer the membrane filter to the surface of the agar while avoiding air bubbles.

2.3 Incubation

Incubate the samples in an incubator under aerobic conditions for 4 to 6 days at a temperature of 28-30°C.

3. Evaluation and Interpretation of the Results

Distinct colonies developed on the medium may be considered wild yeast. Some strains of culture yeast may show slight growth on LCSM, which is why only distinct colonies (see table below) are considered as wild yeast. Report the number of wild yeast per unit of starting material.




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Special Features of Evaluation

Occurring result		Valuation
Clear, milky-turbid, opaque agar without any colonies.		Negative finding
Clear, milky-turbid, opaque agar with few tiny white colonies.		Positive finding (slow growing non-saccharomyces wild yeast, or a slight growth of saccharomyces types)
Clear, milky-turbid, opaque agar with big white colonies. (Distinct colonies)		Positive finding (Non-saccharomyces wild yeast)

4. Product Information

4.1 Packaging and Content

Item Item no.	Packaging Content	Size [cm]	Weight [kg]	
			netto	gross
LCSM kit 9.23552.244	cardboard box with 1x 200g powder in PE bottle 1x 60mL solution in HDPE bottle	14 x 23 x 11	0,26	0,42

4.2 Storage and Shelf Life

Store at 4-8°C under dry and dark conditions according to product specification.

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4.3 Waste Disposal

- No dangerous good
- No hazardous material after preparation
- Please consider your local waste regulations
- Not inoculated media can be disposed of with normal laboratory waste
- Inoculated and incubated media are to be sterilized before disposal at a temperature of 121°C/250°F for 20 min

4.4 Warnings and Precautions

Always wear protective clothing when handling hot media.

Be careful when working with hazardous material. Please consider safety data sheet.

This product is only to use in microbiological control. Not for medical use or purpose.

5. Quality Control

LCSM (Lin's Cupric Sulfate Medium) gets tested with following microorganisms for the microbiological quality control.

5.1 Tested Microorganisms

Microorganism	Growth (at 29±1°C after 3-5 days)
<i>Saccharomyces cerevisiae</i> (BRY 96)	No growth
<i>Saccharomyces cerevisiae</i> (BRY 420)	No growth
<i>Saccharomyces pastorianus</i> (BRY 404)	No growth
<i>Pichia anomala</i> (BRY 409)	Cream beige, matt, opaque colonies (2-3 mm)
<i>Saccharomyces diastaticus</i> (BRY 402)	Cream beige, matt, opaque colonies, crumbly texture (0.5–1 mm)

6. Similar Products

Product	Item No.	Targeted Organism	Sample Type
LWYM	9.04675.244	Saccharomyces wild yeast	e.g. yeast
Wort Agar	8.40360.782	Yeast	e.g. beer