



2017/18 PRODUCT CATALOGUE

SCHIZOSACCHAROMYCES POMBE

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Technical Data

SCHIZOSACCHAROMYCES POMBE

Besides *Saccharomyces Cerevisiae*, *Schizosaccharomyces Pombe*, a fission yeast, is the other commonly studied yeast. *Schizosaccharomyces Pombe* is different from *Saccharomyces Cerevisiae* in a way that it has a typical eukaryotic cell cycle with discrete G1, G2 and M phases. Another difference is its chromosome structure and RNA processing that are much closer to the systems present in mammalian cells compared to *Saccharomyces Cerevisiae*.

Schizosaccharomyces Pombe is isolated from Pombe (an East African Millet beer). The size of its genome is about 14 Mb containing approximately 7000 genes arranged in three distinct genomes.

Schizosaccharomyces Pombe has two mating types, h+ and h-, and is stable as a haploid or diploid. The most commonly auxotrophic markers used with *Schizosaccharomyces Pombe* are; Ade, Glu, His, Leu, Lys and Ura. Homologous recombination of *Schizosaccharomyces Pombe* is less efficient compared to *Saccharomyces Cerevisiae*. Conjugation and sporulation can only take place when starved for nutrients.

Formedium™ is producing a large range of media for the cultivation of *Schizosaccharomyces Pombe*. Fission yeast like *Schizosaccharomyces Pombe* can be grown on *Saccharomyces Cerevisiae* media like YPD for general culturing purposes, however, the cells are not as happy on Peptone (the P in YPD).

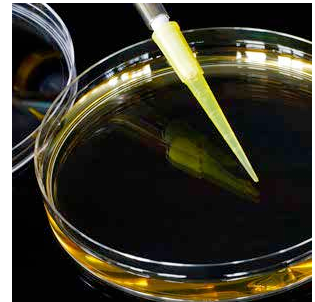
Therefore YPD (Yeast Extract, Peptone and Dextrose) is often replaced by media like YES in which Peptone is omitted or YSO in which Peptone is replaced by Casamino Acids.

Many of the *Schizosaccharomyces Pombe* media contain 30 gram/litre of Dextrose (glucose.H₂O) compared to the *Saccharomyces Cerevisiae* media with 20 gram/litre of Dextrose. To prevent caramelization of Glucose during autoclavation it is essential to mix the powdered media in water for 5 minutes in order to dissolve the Glucose completely. Autoclavation is recommended at 15 psi for 15 minutes or 10 psi for 20 minutes. Filter sterilization is a good alternative as well.

Formedium™ is producing four groups of media formulations for the cultivation of *Schizosaccharomyces Pombe*.

S. Moreno, A. Klar, and P. Nurse. (1991). Molecular genetic analysis of the fission yeast Schizosaccharomyces pombe. Methods Enzymol. 194: 795-823.

Nasim, A., Young, P. and Johnson, B.F., eds. (1989) Molecular Biology of the Fission Yeasts. Academic Press Inc., NY.



COMPLEX MEDIA

Schizosaccharomyces Pombe Complex Media

This product category includes:

- 5 YE Broth
- 5 YE Agar
- 6 YES Broth
- 7 YES Agar
- 8 YSO Broth
- 9 YSO Agar
- 10 ME Broth
- 11 ME Agar

YE BROTH

SKU	Size
PCM0102	250g
PCM0105	500g
PCM0110	1000g
PCM0150	5000g
PCM0155	15kg

(Yeast extract, Glucose)

Formula	g/l
Yeast extract	5
Dextrose	30
Total	35

Suspend 35.00 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

YE AGAR

SKU	Size
PCM0202	250g
PCM0205	500g
PCM0210	1000g
PCM0250	5000g
PCM0255	15kg

(Yeast extract, Glucose and Agar)

Formula	g/l
Yeast extract	5
Dextrose	30
Agar	17
Total	52

Suspend 52.00 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

YES BROTH

SKU	Size
PCM0302	250g
PCM0305	500g
PCM0310	1000g
PCM0350	5000g
PCM0355	15kg

(Yeast extract, Glucose, Amino acid supplement)

Formula	g/l
Yeast extract	5
Dextrose	30
Adenine	0.05
L-Histidine	0.05
L-Leucine	0.05
L-Lysine HCl	0.05
Uracil	0.05
Total	35.25

Suspend 35.25 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

YES AGAR

SKU	Size
PCM0402	250g
PCM0405	500g
PCM0410	1000g
PCM0450	5000g

(Yeast extract, Glucose, Agar, Amino acid supplement)

Formula	g/l
Yeast extract	5
Dextrose	30
Agar	17
Adenine	0.05
L-Histidine	0.05
L-Leucine	0.05
L-Lysine HCl	0.05
Uracil	0.05
Total	52.25

Suspend 52.25 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

YSO BROTH

SKU	Size
PCM0502	250g
PCM0505	500g
PCM0510	1000g
PCM0550	5000g

(Casamino acids, Glucose, Amino acid supplement w/o Adenine)

Formula	g/l
Dextrose	30
Casamino acids	2
L-Histidine	0.05
L-Leucine	0.05
L-Lysine HCl	0.05
Uracil	0.05
Total	32.20

Suspend 32.20 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

YSO AGAR

SKU	Size
PCM0602	250g
PCM0605	500g
PCM0610	1000g
PCM0650	5000g

(Casamino acids, Glucose, Agar, Amino acid supplement w/o Adenine)

Formula	g/l
Dextrose	30
Casamino acids	2
Agar	17
L-Histidine	0.05
L-Leucine	0.05
L-Lysine HCl	0.05
Uracil	0.05
Total	49.20

Suspend 49.20 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

ME BROTH

SKU	Size
PCM0702	250g
PCM0705	500g
PCM0710	1000g

(Malt extract, Amino acid supplement w/o L-Lysine HCl)

Formula	g/l
Malt Extract	30
Adenine	0.05
L-Histidine	0.05
L-Leucine	0.05
Uracil	0.05
Total	30.20

Suspend 30.20 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

ME AGAR

SKU	Size
PCM0702	250g
PCM0705	500g
PCM0710	1000g

(Malt extract, Agar, Amino acid supplement w/o L-Lysine HCl)

Formula	g/l
Malt Extract	30
Agar	17
Adenine	0.05
L-Histidine	0.05
L-Leucine	0.05
Uracil	0.05
Total	47.20

Suspend 47.2 gram powdered medium in 1 litre distilled water

Store dry at room temperature



GHS07 Skin & Eye Irritation

MINIMAL DEFINED MEDIA

Schizosaccharomyces Pombe Minimal Defined Media

View technical data on pages 24 - 25.

This product category includes:

- 12 EMM Agar
- 13 EMM Broth
- 13 EMM Agar without Dextrose
- 14 EMM Broth without Dextrose
- 14 EMM Agar low Dextrose, 5 g/l
- 15 EMM Broth low Dextrose, 5 g/l
- 15 EMM Agar plus 1 x SP Supplements, -Leu, -Ura
- 16 EMM Broth plus 1 x SP Supplements, -Leu, -Ura
- 16 EMMS
- 17 EMM Agar without Phosphates
- 17 EMM Broth without Phosphates
- 18 EMM Agar without Nitrogen
- 18 EMM Broth without Nitrogen
- 19 EMM Glutamate Agar
- 19 EMM Glutamate Broth
- 20 MB Agar
- 20 MB Broth
- 21 MB Broth without Amino acids
- 21 MMA Agar Medium

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EMM AGAR

SKU	Size
PMD0101	100g
PMD0102	250g
PMD0105	500g
PMD0110	1000g
PMD0150	5000g
PMD0155	15kg

EMM containing Dextrose, Minerals, Trace elements, Vitamins and Agar without Amino Acids.

For technical data please see pages 24 - 25.

Suspend 49.3 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM BROTH

SKU	Size
PMD0201	100g
PMD0202	250g
PMD0205	500g
PMD0210	1000g
PMD0250	5000g
PMD0255	15kg

EMM containing Dextrose, Minerals, Trace elements and Vitamins without Agar and Amino Acids.

For technical data please see pages 24 - 25.

Suspend 32.3 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM AGAR WITHOUT DEXTROSE

SKU	Size
PMD0301	100g
PMD0302	250g
PMD0305	500g
PMD0310	1000g

EMM containing Minerals, Trace elements, Vitamins and Agar without Dextrose and Amino Acids.

For technical data please see pages 24 - 25.

Suspend 29.3 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM BROTH WITHOUT DEXTROSE

SKU	Size
PMD0401	100g
PMD0402	250g
PMD0405	500g
PMD0410	1000g

EMM containing Minerals, Trace elements, Vitamins without Dextrose, Agar and Amino Acids.

For technical data please see pages 24 - 25.

Suspend 12.3 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM AGAR LOW DEXTROSE, 5 G/L

SKU	Size
PMD0501	100g
PMD0502	250g
PMD0505	500g
PMD0510	1000g

EMM containing Dextrose, Minerals, Trace elements, Vitamins and Agar without Amino Acids.

For technical data please see pages 24 - 25.

Suspend 34.3 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM BROTH LOW DEXTROSE, 5 G/L

SKU	Size
PMD0601	100g
PMD0602	250g
PMD0605	500g
PMD0610	1000g

EMM containing Dextrose, Minerals, Trace elements and Vitamins without Agar and Amino Acids.

For technical data please see pages 24 - 25.

Suspend 17.3 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM AGAR PLUS 1 X SP SUPPLEMENTS, -LEU, -URA

SKU	Size
PMD0701	100g
PMD0702	250g
PMD0705	500g
PMD0710	1000g

EMM containing 0.15 g SP supplements (Ade, His and Lys), Dextrose, Minerals, Trace elements, Vitamins and Agar.

For technical data please see pages 24 - 25.

Suspend 49.5 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM BROTH PLUS 1 X SP SUPPLEMENTS, -LEU, -URA

SKU	Size
PMD0801	100g
PMD0802	250g
PMD0805	500g
PMD0810	1000g

EMM containing 0.15 g SP supplements (Ade, His and Lys), Dextrose, Minerals, Trace elements and Vitamins without Agar.

For technical data please see pages 24 - 25.

Suspend 32.5 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMMS

SKU	Size
PMD0910	1000g

EMM containing 218.6 g/l Sorbitol (1.2 M), Dextrose, Minerals, Trace elements and Vitamins without Agar and Amino Acids.

For technical data please see pages 24 - 25.

Suspend 250.9 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM AGAR WITHOUT PHOSPHATES

SKU	Size
PMD1001	100g
PMD1002	250g
PMD1005	500g
PMD1010	1000g

EMM containing Dextrose, Minerals, Trace elements, Vitamins and Agar without NaH₂PO₄ and Amino acids.

For technical data please see pages 24 - 25.

Suspend 47.1 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM BROTH WITHOUT PHOSPHATES

SKU	Size
PMD1101	100g
PMD1102	250g
PMD1105	500g
PMD1110	1000g

EMM containing Dextrose, Minerals, Trace elements and Vitamins without NaH₂PO₄ and Agar.

For technical data please see pages 24 - 25.

Suspend 30.1 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM AGAR WITHOUT NITROGEN

SKU	Size
PMD1201	100g
PMD1202	250g
PMD1205	500g
PMD1210	1000g

EMM containing Dextrose, Minerals, Trace elements, Vitamins and Agar without NH4Cl and Amino acids.

For technical data please see pages 24 - 25.

Suspend 44.3 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM BROTH WITHOUT NITROGEN

SKU	Size
PMD1301	100g
PMD1302	250g
PMD1305	500g
PMD1310	1000g

EMM containing Dextrose, Minerals, Trace elements and Vitamins without NH4Cl, Agar and Amino acids.

For technical data please see pages 24 - 25.

Suspend 27.3 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM GLUTAMATE AGAR

SKU	Size
PMD2101	100g
PMD2102	250g
PMD2105	500g
PMD2110	1000g
PMD2150	5kg
PMD2155	15kg

Ammonium Chloride (5 g/l) is replaced by Glutamate (3.75 g/l) as a Nitrogen source in EMM Glutamate Agar. EMM Glutamate Agar contains Dextrose, Minerals, Trace elements, Vitamins and Agar and is without Amino Acids.

For technical data please see pages 24 - 25.

Suspend 48.0 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

EMM GLUTAMATE BROTH

SKU	Size
PMD1801	100g
PMD1802	250g
PMD1805	500g
PMD1810	1kg
PMD1850	5kg
PMD1855	15kg

Ammonium Chloride (5 g/l) is replaced by Glutamate (3.75 g/l) as a Nitrogen source in EMM Glutamate Broth. EMM Glutamate Broth contains Dextrose, Minerals, Trace elements, Vitamins and is without Amino Acids.

For technical data please see pages 24 - 25.

Suspend 31.0 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

MB AGAR

SKU	Size
PMD1401	100g
PMD1402	250g
PMD1405	500g
PMD1410	1000g

MB containing Dextrose, Minerals, Trace elements, Vitamins, Agar and Amino acids.

For technical data please see pages 24 - 25.

Suspend 28.9 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

MB BROTH

SKU	Size
PMD1501	100g
PMD1502	250g
PMD1505	500g
PMD1510	1000g

MB containing Dextrose, Minerals, Trace elements and Vitamins without Agar.

For technical data please see pages 24 - 25.

Suspend 11.6 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

MB BROTH WITHOUT AMINO ACIDS

SKU	Size
PMD1701	100g
PMD1702	250g
PMD1705	500g
PMD1710	1kg

MB containing Dextrose, Minerals, Trace elements and Vitamins without Agar.

For technical data please see pages 24 - 25.

Suspend 11.6 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

MMA AGAR MEDIUM

SKU	Size
PMD1601	100g
PMD1602	250g
PMD1605	500g
PMD1610	1000g

EMM containing Dextrose, Minerals, Trace elements and Vitamins without NaH₂PO₄ and Agar.

For technical data please see pages 24 - 25.

Suspend 33.7 gram powdered medium in 1 litre distilled water

Store dry at 0°C



GHS07 Skin & Eye Irritation

SP SUPPLEMENTS

Schizosaccharomyces Pombe Supplements

A basic mixture of Ade, His, Leu, Lys and Ura and it's derived formulations.

This product category includes:

- 22 SP Supplements
- 23 SP Supplements, -Leu, -Ura
- 23 SP Supplements, -Lys

SP SUPPLEMENTS

SKU	Size
PSU0101	10g
PSU0110	100g

Formula	g/l
Adenine	50
L-Histidine HCl	50
L-Leucine	50
L-Lysine HCl	50
Uracil	50

Suspend 0.25 gram in 1 litre distilled water for 1X supplements

Add 2 - 4x for auxotrophs or slower growing strains

Store dry at room temperature



GHS07 Skin & Eye Irritation

SP SUPPLEMENTS, -LEU, -URA

SKU	Size
PSU0201	10g
PSU0210	100g

Formula	g/l
Adenine	50
L-Histidine HCl	50
L-Lysine HCl	50

Suspend 0.15 gram in 1 litre distilled water for 1X supplements



GHS07 Skin & Eye Irritation

SP SUPPLEMENTS, -LYS

SKU	Size
PSU0301	10g
PSU0310	100g

Formula	g/l
Adenine	50
L-Histidine HCl	50
L-Leucine	50
Uracil	50

Suspend 0.2 gram in 1 litre distilled water for 1X supplements

Add 2 - 4x for auxotrophs or slower growing strains

Store dry at room temperature



GHS07 Skin & Eye Irritation

SCHIZOSACCHAROMYCES POMBE MINIMAL DEFINED MEDIA

TECHNICAL DATA

	EMM	EMM w/o Dextrose	EMM-Low Glucose	EMMS (1,2 M Sorbitol)	EMM w/o Phosphate	EMM w/o Nitrogen	EMM SP	MB Medium	MMA Agar Medium	Units
Carbon Source										
Dextrose	20.00	-	5.00	20.00	20.00	20.00	20.00	-	-	g
Glucose	-	-	-	-	-	-	-	5.00	10.00	g
Sorbitol	-	-	-	216.00	-	-	-	-	-	g
Amino Acids										
Adenine	-	-	-	-	-	-	50.00	-	-	mg
Histidine	-	-	-	-	-	-	50.00	-	-	mg
Lysine	-	-	-	-	-	-	50.00	-	-	mg
L-Leucine	-	-	-	-	-	-	-	150.00	-	mg
Uracil	-	-	-	-	-	-	-	150.00	-	mg
Minerals										
Phtalic Acid K+	3.00	3.00	3.00	3.00	3.00	3.00	3.00	-	-	g
Na ₂ HPO ₄	2.20	2.20	2.20	2.20	-	2.20	2.20	-	-	g
NH ₄ Cl	5.00	5.00	5.00	5.00	5.00	-	5.00	-	-	g
MgCl ₂ ·6H ₂ O	1.05	1.05	1.05	1.05	1.05	1.05	1.05	-	-	g
CaCl ₂ ·2H ₂ O	14.70	14.70	14.70	14.70	14.70	14.70	14.70	100.00	100.00	mg
KCl	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	g
Na ₂ SO ₄	40.00	40.00	40.00	40.00	40.00	40.00	40.00	-	-	mg
KH ₂ PO ₄	-	-	-	-	-	-	-	500.00	1000.00	mg
K ⁺ Acetate	-	-	-	-	-	-	-	360.00	-	mg
MgSO ₄ ·7H ₂ O	-	-	-	-	-	-	-	500.00	500.00	mg
NaCl	-	-	-	-	-	-	-	100.00	100.00	mg
(NH ₄) ₂ SO ₄	-	-	-	-	-	-	-	5000.00	5000.00	mg
Vitamins										
Panhotenic acid	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	mg
Nicotinic acid	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	mg
Inositol	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	mg
Biotin	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.01	0.01	mg
Ca-Pantothenate	-	-	-	-	-	-	-	1.00	1.00	mg

	EMM	EMM w/o Dextrose	EMM-Low Glucose	EMMS (1,2 M Sorbitol)	EMM w/o Phosphate	EMM w/o Nitrogen	EMM SP	MB Medium	MMA Agar Medium	Units
Trace Elements										
H3BO3	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	mg
MnSO4.H2O	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	mg
ZnSO4.7H2O	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	mg
FeCl3.6H2O	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	mg
Na2MoO4.2H2O	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	mg
KI	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	mg
CuSO4.5H2O	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	mg
Citric Acid	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-	-	mg
Agar										
Agar	(17)	(17)	(17)	-	(17)	(17)	(17)	-	17.00	g
Total										
Total	32.30	12.30	17.30	248.30	30.10	27.30	32.50	11.90	-	g/l
Total (Agar)	(49.30)	(23.30)	(34.30)	-	(47.10)	(44.30)	(49.50)	-	-	g/l