

HyClone™ powdered media and balanced salts

MEDIA AND SUPPLEMENTS

HyClone™ powdered media and balanced salts are manufactured using ISO 9001:2000-certified processes and supplied in convenient packaging formats (Fig 1). All raw material components have passed strict quality control testing, and all formula ingredients are fully traceable with documented origin.

Key features of powdered media and balanced salts include:

- Traceable and documented origin of all formula ingredients
- Validated and consistent production processes for high lot-to-lot consistency
- Manufactured in accordance with current good manufacturing practice (cGMP) and ISO 9001 guidelines

Specifications

Powdered media and salts are extremely hygroscopic and must be protected from atmospheric moisture. Keep sealed and stored at 2°C to 8°C in their original container. We recommend using the entire contents of each package immediately after opening.

The products are intended to be used only for further manufacturing or research and are not intended for diagnostic or therapeutic use or administration to animals or humans.

Suggested preparation (1 × solutions)

We do not recommend preparing concentrated solutions of media or salts from a powdered base due to the potential formation of insoluble salt complexes and precipitates.

Supplements may be added prior to final preparation and filtered or added aseptically to the sterile solution.

1. Using a mixing vessel slightly larger than the desired final volume, measure out 90% of the total volume of cell culture-grade water.
2. While gently stirring the water, slowly add the appropriate measured amount of powder. Water temperatures should be 15°C to 30°C. Do not heat the water. Mix until dissolved.



Fig 1. Powdered media and balanced salts are supplied in convenient packaging formats.

3. If using the entire content of the container, rinse the package thoroughly with water to remove all traces of powder. Add the rinse to the solution in Step 2.
4. To the solution, add the appropriate concentration of NaHCO_3 as shown in Table 1. Mix gently until dissolved.
5. While stirring, adjust the pH of the solution to 0.1 to 0.3 pH units below the desired working pH. See Table 1 for recommended working pH. Use 1 N HCl or 1 N NaOH to adjust pH.
6. Once the pH has stabilized, bring the solution to the desired final volume while stirring gently.
7. Sterilize immediately by membrane filtration using a 0.2 μm or less membrane filter. Aseptically dispense the solution into sterile containers and store dark at 2°C to 8°C.

Preparation note

The pH will normally increase 0.1 to 0.3 pH units during filtration.

Table 1. Sodium bicarbonate concentrations for powdered media and salts

Product	Product code	Sodium bicarbonate level (g/L)	mL/L of a 7.5% NaHCO ₃ solution	Recommended working pH
BME	SH30159	1.2	16.0	6.9 to 7.3
Dulbecco's Modified Eagle's (DME) low glucose	SH30002	3.7	49.3	7.0 to 7.4
DME low glucose without phenol red	SH30044	3.7	49.3	7.0 to 7.4
DME high glucose	SH30003	3.7	49.3	7.0 to 7.4
DME high glucose, modified	SH30045	3.7	49.3	7.0 to 7.4
DME F12 1:1	SH30004	1.2	16.0	6.9 to 7.3
DME F12, modified	SH30069	1.2	16.0	6.9 to 7.3
Grace's insect medium	SH30060	0.35	4.7	6.0 to 6.4
Iscove's Modified Dulbecco's medium (IMDM)	SH30005	3.024	40.3	7.0 to 7.4
Medium 199/Earle's Balanced Salt Solution (EBSS)	SH30297	2.2	29.3	7.1 to 7.4
L-15 Leibovitz	SH30048*	N/A	N/A	7.3 to 7.9
Minimum Essential Medium (MEM) alpha	SH30007	2.2	29.3	7.0 to 7.4
MEM/EBSS	SH30008	2.2	29.3	7.0 to 7.4
MEM, modified	SH30050	2.2	29.3	7.0 to 7.4
McCOY'S	SH30049	2.2	29.3	7.0 to 7.4
Ham's F10	SH30009	1.2	16.0	7.0 to 7.4
Ham's F12	SH30010	1.176	15.7	7.6 to 7.9
RPMI 1640	SH30011	2.0	26.7	7.0 to 7.4
RPMI 1640 (Bakers X-tra soluble)	SH30012	2.0	26.7	7.0 to 7.4
Dulbecco's phosphate-buffered saline (DPBS) without calcium or magnesium (powder)	SH30013*	N/A	N/A	7.0 to 7.2
EBSS	SH30014	2.2	29.3	7.1 to 7.4
HBSS	SH30015	0.35	4.7	7.0 to 7.4
HBSS, without calcium or magnesium, with phenol red (powder)	SH30016	0.35	4.7	7.0 - 7.4
HBSS, without calcium or magnesium, phenol red (powder)	SH30107	0.35	4.7	7.0 to 7.9
Williams E	SH30094	2.2	29.3	7.0 to 7.4

* Formulation does not require a NaHCO₃ supplement (N/A = not applicable)

Deterioration of powdered media and salts may be observed by the following:

- Granulation or clumping (i.e., powder should be free-flowing)
- Color change from bone white to yellowish-orange with a distinguishable odor
- Insolubility
- pH change

If a powdered product has any of these symptoms or other signs of deterioration, please call your local sales representative for assistance.

Quality control testing

Quality control test specifications are listed in Table 2.

Table 2. Quality control testing chart

(S = standard, O = optional, N/A = not applicable)

	Powdered media	Powdered salts
Biological performance		
Growth promotion	S	S
Cytotoxicity	O	S
Microbiological testing		
Sterility	N/A	N/A
Mycoplasma/virus*	O	O
Endotoxin	S	S
Physicochemical tests		
Solubility	S	S
pH	S	S
Osmolality	S	S
Moisture	S	S
Particle size	S	S
Key elements	O	O

* Mycoplasma/virus screening is routinely carried out on products. Refer to the certificate of analysis for actual test results.

Ordering information

Powdered media and balanced salts are manufactured in packaged to yield 5, 10, or 50 L quantities when rehydrated.

Product	Product code
HyClone DME medium, low glucose	SH30002
HyClone DME medium, low glucose without phenol red	SH30044
HyClone DME medium, high glucose	SH30003
HyClone DME medium, high glucose, modified	SH30045
HyClone DME medium F12 1:1	SH30004
HyClone DME medium F12, modified	SH30069
HyClone Grace's insect medium	SH30060
HyClone IMDM	SH30005
HyClone Medium 199 with EBSS	SH30297
HyClone Leibovitz L-15 medium	SH30048
HyClone MEM alpha	SH30007
HyClone MEM with EBSS	SH30008
HyClone MEM, modified	SH30050
HyClone McCoy's medium	SH30049
HyClone Ham's F10 medium	SH30009
HyClone Ham's F12 medium	SH30010
HyClone RPMI 1640 medium	SH30011
HyClone RPMI 1640 (Bakers X-tra soluble) medium	SH30012
HyClone DPBS, without calcium or magnesium (powder)	SH30013
HyClone EBSS	SH30014
HyClone HBSS	SH30015
HyClone HBSS, without calcium or magnesium, with phenol red (powder)	SH30016
HyClone HBSS, modified without phenol red	SH30107
HyClone Williams E medium	SH30094

Related product	Product code
HyClone sodium bicarbonate	SH30033

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