FLOTATION SOLUTIONS

Flotation solutions		Specific gravity (s.g.)
FS 1	Sheather's Sugar Solution	1.200
FS 2	Satured Sodium Chloride	1.200
FS 3	Zinc Sulphate 1.200	1.200
FS 4	Sodium Nitrate	1.200
FS 5	Sucrose and Potassium Iodomercurate (Rinaldi)	1.250
FS 6	Magnesium Sulphate	1.280
FS 7	Zinc Sulphate 1.350	1.350
FS 8	Potassium Iodomercurate	1.440
FS 9	Zinc Sulphate and Potassium Iodomercurate (Tampieri - Restani)	1.450

FS 1 - Sheather's Sugar Solution (s.g. - 1.200)

1 - Combine 355 ml of water and 454 grams of granulated sugar (sucrose). Corn syrup and dextrose are not suitable substitutes.
2 - Dissolve the sugar in the water by stirring on a magnetic stirrer over low or indirect heat (e.g., the top half of a double boiler). If the container is placed on a high direct heat source, the sugar may caramelize instead of dissolving in the water.
3 - After the sugar is dissolved and the solution has cooled to room temperature, add 6 ml of formaldehyde (40%) USP to prevent microbial growth.
4 - Check the s.g. with a hydrometer.

FS 2 - Satured Sodium Chloride (NaCl, s.g. - 1.200)

1 - Combine 1000 ml of warm water and about 500 grams of salt until no more salt goes into solution and the excess settles on the bottom of the container.
2 - Dissolve the salt in the water by stirring on a magnetic stirrer.
3 - To ensure that the solution is fully saturated, it should be allowed to stand overnight at room temperature. If the remaining salt crystals dissolve overnight, more can be added to ensure that the solution is saturated.
4 - Check the s.g. with a hydrometer, recognizing that the s.g. of saturated solution will vary slightly with environmental temperature.

FS 3 – Zinc Sulphate ($ZnSO_4$-$7H_2O$, s.g. - 1.200)

1 - Combine 500 ml of water and 330 grams of zinc sulphate.
2 - Dissolve the zinc sulphate in the water by stirring on a magnetic stirrer.
3 - Add water to reach a final volume of 1000 ml.
4 - Check the s.g. with a hydrometer.

FS 4 – Sodium Nitrate ($NaNO_3$, s.g. - 1.200)

1 - Combine 500 ml of water and 315 grams of sodium nitrate.
2 - Dissolve the sodium nitrate in the water by stirring on a magnetic stirrer.
3 - Add water to reach a final volume of 1000 ml.
4 - Check the s.g. with a hydrometer.

FS 5 – Sucrose and Potassium Iodomercurate (Rinaldi) (s.g. 1.250)

1 - Combine 600 ml of water and 600 grams of sucrose.
2 - Dissolve the sugar in the water by stirring on a magnetic stirrer over low or indirect heat (e.g., the top half of a double boiler). If the container is placed on a high direct heat source, the sugar may caramelize instead of dissolving in the water.
3 - After the sugar is dissolved and the solution has cooled to room temperature, add 20 ml of solution B (see below).
4 - Check the s.g. with a hydrometer.

Solution B

1 - Combine 100 grams of mercure iodide and 63 ml of water.
2 - Stir vigorously.
3 - Add 78 grams of potassium iodide and stir again.

FS 6 – Magnesium Sulphate ($MgSO_4$, s.g. - 1.280)

1 - Combine 500 ml of water and 350 grams of magnesium sulphate.
2 - Dissolve the magnesium sulphate in the water by stirring on a magnetic stirrer.
3 - Add water to reach a final volume of 1000 ml.
4 - Check the s.g. with a hydrometer.

FS 7 – Zinc Sulphate (ZnSO4-7H2O, s.g. - 1.350)

1 - Combine 685 ml of water and 685 grams of zinc sulphate.
2 - Dissolve the zinc sulphate in the water by stirring on a magnetic stirrer.
3 - Check the s.g. with a hydrometer.

FS 8 – Potassium Iodomercurate (s.g. - 1.440)

1 - Combine 399 ml of water and 150 grams of mercure iodide.
2 - Stir vigorously.
3 - Add 111 grams of potassium iodide and stir again.
4 - Check the s.g. with a hydrometer.

FS 9 – Zinc Sulphate and Potassium Iodomercurate (Tampieri - Restani) (s.g. - 1.450)

1 - Combine 600 ml of water and 600 grams of zinc sulphate (ZnSO4-7H2O).
2 - Dissolve the zinc sulphate in the water by stirring on a magnetic stirrer.
3 - After the zinc sulphate is dissolved add the solution B (see below).
4 - Check the s.g. with a hydrometer.

Solution B

1 - Combine 100 grams of mercure iodide and 63 ml of water.
2 - Stir vigorously.
3 - Add 78 grams of potassium iodide and stir again.