

Aim:*Swarnareep*
09/03/22

Prepare and submit oral rehydration salt (ORS) powder IP 2007 (WHO 2005) for and oral rehydration solution 1 litre.

Reference:

Dr. AA Hajare "Practical book of physical pharmaceutics II" first edition, Nirali Publication 2019, page no. 7.5 - 7.6.

Requirements:

- a) Chemical : Sodium chloride, potassium chloride, Glucose, Sodium citrate.
- b) Glasswares/Apparatus : Mortar and pestle, weighing balance, Spatula, Butter paper, polybags.

Theory:

Administration of fluid and electrolytes by mouth to prevent or treat dehydration due to acute diarrhoeal diseases is known as oral rehydration therapy. Acute diarrhoea leads to loss of essential water and salts and unless these are adequately replaced dehydration will develop. Oral rehydration therapy does not stop diarrhoea.

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Ingredient	Standard formula	Working formula	Role of ingredient
Sodium Chloride	12.633%	2.544 g/L	Sodium replace the loss of essential elements in diarrhoea and vomiting.
Glucose	65.254%	13.5 g/L	Glucose facilitates absorption of sodium and hence water.
Potassium Chloride	2.312%	1.9 g/L	It also replace the loss of essential element in diarrhoea and vomiting.
Sodium Citrate	14.196%	2.9 g/L	Citrate corrects the acidosis that occurs due to diarrhoea and dehydration solution.

but the diarrhoea continues for only a limited time. The universal oral rehydration salts are recommended by the WHO (World Health Organization) and UNICEF (The United Nations Children's Fund) is a United Nations programme as prescribed in this experiment.

ORS is dry mixture of sodium chloride, Potassium chloride, glucose anhydrous and trisodium citrate, dehydrated or sodium bicarbonate. ORS is the non-proprietary name for a balanced glucose electrolyte mixture first used in 1969 and approved recommended and distributed by UNICEF and WHO as a drug for the treatment of clinical dehydration throughout the world. In 1981, another mixture containing trisodium citrate instead of sodium hydrogen carbonate (sodium bicarbonate) was developed with the aim of improving the stability of ORS in hot and humid climates. For more than 20 years, WHO and unicef have recommended this single formulation of ORS to prevent or treat dehydration from diarrhoea Irrespective of that cause or age group affected. This product, which provides a solution containing 90 m Eq/L of sodium with a total osmolality of 311 mol/L, has proven effective and without apparent adverse effects in worldwide use. Because of the improved effectiveness of reduced osmolality of ORS.

solution (245 mos mol/L). WHO and UNICEF now recommended that countries should should be use above new formula for use and manufacture for diarrhoea of all etiologies and in all age groups.

- Glucose facilitates the absorption of sodium (and hence water) on a 1:1 molar ~~mass~~ basis in the small intestine, sodium and potassium are needed to replace the body losses of these essential ions during diarrhoea (and vomiting), citrate corrects the acidosis that occurs because of diarrhoea and dehydration.

Procedure :

- (i) Clean all the glassware and dry then properly as per sop.
- (ii) Accurately weight each ingredient properly incorporate the powders in order of bulk starting with potassium chloride followed by sodium citrate and final at anhydrous glucose in portion adding at each addition upon a quantity that approximately doubles the bulk already in the ~~mixture~~ mortar.

Result :

Oral rehydration solution was successfully prepared and submitted.

Swarnam
09/03/22

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