

A. Manufacturing Technology : Protein Colloid is manufactured by washing and cooking of Animal skin, meat scraps and tendons.

Sl No.	Process	Description of Machine	Capacity/Area
01	Cleaning : Animal skin, meat scraps and tendons are cleaned thoroughly .	Manually cleaned	Open space / big Hall is required
02	Cutting : Material are cut into small pieces. This helps in better extraction of collagen.	Cutting machine & Conveyor Belt is used	As per requirement
03	Pre-treatment (Acid/Lime) : Soaked in dilute acid or lime water. This softens the material and prepares collagen for extraction	Minimum 01 tank	5000 ltr per tank or Higher
04	Heating/Cooking : Heated in water at 60-90Celcius . Collagen dissolve into water, forming a gelatine solution	Minimum 01 or more tank	4000 ltr per tank or Higher
05	Filtration : The solution is filtered to remove solids	Required size sieves are used	-
06	Concentration/Evaporation : Heated to make it thicker (concentrated)	Minimum 02 or more tank	3000 ltr/per tank or Higher
07	Cooling & Drying : On cooling, it form a Gel. Then dried into sheets and flakes	Minimum 02 sets of Roller	As per requirement
08	Grinding : Its grind the dry sheets and flakes in required size.	Grinding machine for fine particle	As per requirement

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B. Testing Parameter : The following tests are required as per specification of Protein colloid.

S. No.	Characteristics	Test Method	Passing Standard
a)	Moisture Content , % by mass	Ind/ME/915 (Prov)	Maximum 15.0
b)	Insoluble Residue , % by mass	-do-	Maximum 1.0
c)	Total Ash Content , % by mass	-do-	Maximum 4.0
d)	Acidity (Inorganic)	-do-	Nil
e)	Organic Acidity % (As Acetic Acid)	-do-	Maximum 0.4
f)	Gum and Tannin Base	-do-	Nil
g)	Starch and Dextrin	-do-	Nil

C. Testing Facility : The following test equipment are essential/desirable for testing of protein colloid . The firm must be having all In-house/ own the essential facilities.

S. No.	Equipment	Capacity	Essential (E)/ Desirable (D)
1	Electrical balance	Max 220gm or higher least count 0.0001gm	Essential
2	Desiccator	05 litre or higher	Essential
3	Electrical drying oven	300 °C or higher	Essential
4	Muffle furnace	1000 °C or higher	Essential
5	Titration glass equipment	Burette, Pipette, Measuring cylinder, Beaker, conical flask, titration flask, moisture dish, silica crucible , Gooch G4 crucible	Essential
6	Hot plate	-	Desirable