

Fish mince and surimi

Fish mince is a commercially important commodity locally referred as '**keema**'. Mince can be prepared by collecting the meat either from the fish fillet or headed and gutted fish using a bone separator. A commercially important intermediate product prepared from fish mince is '**surimi**' which is finally used to prepare variety of products. Surimi is stabilized myofibrillar protein prepared by water washing of mechanically deboned fish mince after removal of water soluble proteins, fat, and other undesirable matter and followed by addition of various additives, stored in frozen condition. **Kamaboko** a regionally important product in Japan is primarily prepared out of surimi.

Hazards

Physical	Chemical	Biological
Glass	Allergens	Spoilage bacteria
	Naturally occurring toxins	
Metal	Pesticide residues	Bacterial pathogens
	Other foreign materials	Heavy metals
	Unapproved additives	

Moisture content
Best quality
77 -79%

Gel strength and deformability - The gel forming ability of surimi is an important attribute in quality evaluation which can be tested by two methods depending upon the buyer namely puncture test and torsion test.

Quality Parameters of Surimi

Colour
Whiteness using colourimeter

Impurities
Presence of scales, fins, bones, foreign matter (hair, filth, metal pieces).



Fishes in tropical regions especially Southeast Asia such as threadfin bream (*Nemipterus* spp.), bigeye snapper (*Priacanthus* spp.), croakers (*Johnius* spp.), lizardfish (*Saurida* spp.), and goat fish (*Upeneus* spp, *Parupeneus* spp.) are used for the production of surimi. In addition to these species like conger eel (*Congresox* spp.), barracuda (*Sphyraena* spp.), hairtail (*Trichiurus* spp.), and leather jacket are also utilized depending upon season and price. High quality surimi with good gel strength is produced from threadfin bream.



Food Safety and Standards (Food Products Standards and Food Additives) Regulations (2011) for Frozen Minced Fish Meat

Raw material

- Clean and fresh fish which do not show any signs of degradation and spoilage shall be used
- The fish shall be gutted; the tail, entrails, bones, tips, skin, head and other non-edible portion shall be removed and eviscerated. Fish shall be washed thoroughly with clean potable water to remove the blood. The variety of fish used shall be specified
- The fish shall be properly iced and maintained at a temperature not exceeding 5°C till transported to the freezing factory

Processing

- Fresh fish, shall be washed to make free of all foreign matter preferably by chilled potable water (5°C) having 5 mg/kg of available chlorine and meat separated from fish in wholesome condition.
- The material shall be quick frozen at a temperature not exceeding -30°C in polyethylene wrappers and packed in waxed cartons in the minimum possible time
- The quick frozen material shall be stored in the cold storage at a temperature not less than -23°C.

Finished Products

- The frozen minced fish meat, on thawing be clean and shall be found undamaged and free from defects. Deterioration, such as dehydration, oxidative rancidity and adverse changes in the texture shall not be present. The product shall be free from foreign matter and finishing agents.

Food additives - Food additives permitted under FSSR (2011) shall be used.

Hygiene - The product shall be prepared and handled in accordance with the guidelines specified in Part-II of Schedule 4 of the Food Safety and Standards (Licensing and Regulation of Food Businesses) Regulations, 2011

Contaminants, Toxins and Residues - The product covered in this standard shall comply with the Food Safety and Standards (Contaminants, toxins and Residues) Regulations, 2011 and

Packaging and Labelling - The provisions of the Food Safety and Standards (Packaging and Labelling), Regulations, 2011, shall apply to the pre-packaged products.

Characteristics	Requirement
Colour of minced fish meat	Characteristic of the species
Texture of the minced meat	Characteristic of the species
Odour	Characteristic of the species, free from rancid, putrid or foreign odour
Flavour	Characteristic of the species, sweetish and pleasant, free from spoil or foreign flavour
Bone content, % by weight, Max	1.0

Parameter	n	c	m	M
Aerobic plate count	5	2	10 ⁵	10 ⁶
Coagulase positive <i>Staphylococci</i>	5	2	10 ²	10 ³
<i>E coli</i>	5	0	20	
<i>Salmonella</i>	5	0	Absent in 25 g	
<i>Vibrio cholera</i>	5	0	Absent in 25 g	
<i>Listeria monocytogenus</i>	5	0	Absent in 25 g	

Unit in cfu/g



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