|  |  |  |  |
| --- | --- | --- | --- |
| ***S. No.*** | ***Requirements*** | ***Sampling plan*** | ***Edible casein, caseinates, whey powder*** |
| 1. | Total Plate Count1 | mM | 40, 000/g50,000/g |
| 2. | Coliform Count2 | mM | 10/g50/g |
| 3. | *E.coli*3 | M | Absent/g |
| 4. | *Salmonella*4 | M | Absent /25g |
| 5. | *S. aureus*5(coagulase positive) | M | Less than10/g |
| 6. | Spore Count:1. Aerobic6a  (*B. cereus* )

 (b) Anaerobic6b(*Clostridium perfringen*) | mMmM | 100/g1000/g10/g100/g |
| 7. | *Listeria monocytogenes*7 | M | Absent/g |
| 8. | *Sampling Guidlines* | n 1-7cStorage & transportSample size | 521,2,6a,b03,4,5,7Ambient, max.300C100g |

**ANNEXURE – I**

**FSSAI (2011) Microbiological parameters of edible casein, caseinates and whey powder**

Sampling plan and interpretation:

The following terms, as used by the International Commission on Microbiological Specifications of Foods (ICMSF) are defined and used in this standards:

n= The number of sample units which must be examined from the batch/lot of food to satisfy the requirements of a particular sampling plan.

 c= the maximum allowable number of defective sample units. This is the number of sample units, which may exceed the microbiological limit specified by m. These are considered marginally acceptable results provided they did not exceed the limit specified by M. When more than this number is found; the lot is rejected by the sampling plan.

m= Represents an acceptable level and values above it are marginally acceptable in terms of the sampling plan.

M= A microbiological criterion which separates marginally acceptable quality from unsatisfactory/potentially hazardous quality. Values above M are unacceptable in terms of the sampling plan and detection of one or more samples exceeding this level would be cause for rejection of the lot.

When 5 or more units of the same variety from a lot or consignment are analyzed (n=5), no more than 2 units (c=2) should exceed the maximum tolerance (m) for microbiological levels stated in the reference criteria and no 1 unit should exceed the stated level for the maximum tolerance (M).

Microbiological criteria and their interpretation:

1. Satisfactory: if a maximum of c/n value are between m and M, and the rest of the values observed are < m ---- means the results are within limits of acceptable microbiological quality and no action is required.
2. Unsatisfactory: If one or more of the values observed are >M or more than c/n values are between m and M --- means the results are outside acceptable microbiological limits linked with hygiene indicators (Total plate count, Coliform count and Yeast and mold count) and are indicative of poor hygiene or poor handling practices.
3. Potentialy hazardous: If one or more of the values observed are >M or more than c/n values are between m and M --- means the results are outside acceptable microbiological limits linked with pathogenic bacteria (E. coli, Salmonella, coagulase positive Staph aureus, B. cereus, Cl. Perfringens, L. monocytogenes) and are indicative of serious food safety concern and immediate remedial action should be initiated. Such results will attract enforcement/prosecution by the concerned food safety authorities.