

Amendment No. 1 Approved on 2009-09-29 to SLS 731 : 2008

**AMENDMENT NO. 1 TO SLS 731 : 2008
SPECIFICATION FOR MILK POWDER (FIRST REVISION)**

EXPLANATORY NOTE

Milk fat occupies an important place in the economics of milk and milk products. The most distinctive role which the milk fat plays in dairy products is flavour. Since milk fat is a relatively expensive part as compared to the other constituents, there is a constant endeavour of certain traders of the industry to adulterate the milk fat with cheaper quality fats.

Therefore, to detect such adulterated products a need has arisen to establish a standard test method to extract fat from milk products and also to amend the existing Polenske value.

Based on the above mentioned facts the Technical Committee on Milk Powder had decided to issue this amendment.

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FOREWORD

Include the following as paragraph 3.

“This standard specifies two methods for the determination of milk fat purity and depending on the availability of facilities, any of the two test methods given in **Appendix D** may be used.”

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Table 1

SI No.V, Column 3, Polenske value of the extracted milk fat.

Delete the existing limit 1.4 to 2.5 and substitute with “**”, which gives reference to the footnote.

Incorporate the following statement as a footnote.

*** If the Polenske value is above 3.5, carry out the determination of Kirschner value as described in SLS 313 : Part 2 : Section 5 and using the Kirschner value and the Polenske value, calculate the percentage of butter fat using the following formula;*

$$\text{Butter fat content, per cent by mass} = \frac{K - 0.2 - 0.1P}{0.235}$$

Where,

P = Polenske value

K = Kirschner value

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APPENDIX C – DETERMINATION OF INSOLUBILITY INDEX

Delete “ISO 8156 : 1987” and substitute with “ SLS 735 : Part 9- Determination of insolubility index in dried milk and dried milk products.”

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APPENDIX D – DETERMINATION OF REICHERT- MEISEL NUMBER, POLENSKE VALUE AND REFRACTIVE INDEX

Delete the existing paragraph in **D.1** and substitute with the following :

D.1 METHOD FOR EXTRACTION OF MILK FAT

D.1.1 APPARATUS AND REAGENTS

D.1.1.2 *Ammonia solution* ,Specific.gravity 0.88

D.1.1.3 *Ethyl alcohol*, 95% v/v

D.1.1.4 *Diethyl ether*

D.1.1.5 *Petroleum ether* , 40 °C – 60 °C boiling range

D.1.1.6 *Separating funnel or stoppered conical flask or stoppered measuring cylinder or stoppered suitable container*, capacity 500 cm³

D.1.1.7 *Drying oven*, maintained at 103 ± 2 °C

D.1.1.8 *Other laboratory equipment*

D.1.2 PROCEDURE

D.1.2.1 Weigh about 30 g of milk powder into a 500-cm³ beaker. Dissolve in 120 cm³ of warm water by vigorous mixing. (no lumps shall be present).

D.1.2.2 Add 30 cm³ of ammonia solution (**D.1.1.2**) and mix thoroughly. Keep the beaker on a boiling water bath for 15 – 20 min (Note the colour change from milky white to opaque yellowish colour).

D.1.2.3 Allow to cool and add 120 cm³ of alcohol (**D.1.1.3**) and mix well. Transfer the contents into a 500-cm³ separating funnel or stoppered suitable container (**D.1.1.6**). Add 100 cm³ of diethyl ether and shake (not vigorously) for 1 min. Add 100 cm³ of petroleum ether and continue to shake (not vigorously) for 30 Sec.

D.1.2.4 Allow the two layers to separate.

D.1.2.5 Siphon out the top ether layer into an evaporating basin. In the case of separating funnel transfer the bottom aqueous layer into a second separating funnel and transfer the top ether layer into an evaporating basin.

D.1.2.6 Repeat the extraction with 50 cm³ portions of both ethers as described earlier. Combine the ether extract in the evaporating basin.

D.1.2.7 Evaporate off the ether in a fume cupboard.

D.1.2.8 Dry the residue in the evaporating basin in a drying oven maintained at 103 ± 2 °C for 2 hours.

D.1.2.9 Use 5 g of this extracted fat for Reichert – Meisel number, Polenske value and Kirschner value (RPK) determination.

D.1.2.10 Refractive index, Reichert – Meisel number, Polenske value and Kirschner value determination of the extracted milk fat shall be carried out in accordance with the relevant methods given in **SLS 313 : Part 1/ Section 5** and **SLS 313 : Part 2/Section 5**.
