Price Rs 22/-

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GOVERNMENT OF INDIA
(MINISTRY OF DEFENCE)

SPECIFICATION No. IND/SL/2804 (a)

Issued on: . .1966.

Supersedes Specification No. IND/SL/2802

NIC LANOLINE

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1 THIS SPECIFICATION IS INTENDED TO GUIDE PURCHASE, INSPECTION AND MANUFACTURE OF STORES AGAINST DEFENCE REQUIREMENTS.

2 IN CASE OF DISCREPANCY BETWEEN THIS SPECIFICATION AND ANY SAMPLE OR PATTERN, THIS SPECIFICATION TOGETHER WITH DRAWINGS, IF ANY, SHALL BE TAKEN AS CORRECT.

3 WHEREVER A REFERENCE TO ANY OTHER SPECIFICATION/DRAWING OCCURS IN THIS SPECIFICATION, IT SHALL BE TAKEN AS A REFERENCE TO THE LATEST VERSION OF THAT SPECIFICATION/DRAWING.

Scope

1 This specifdation prescribes the requirements and methods of test for Lanoline. The material is used for technical uses, for example as an easily removable rust preventive or protective film agent.

Quality

2 Lanoline shall consist wholly of pure wool grease. It shall be homogeneous, free from foreign matter impurities and objectionable odour and shall not be darker than pale brown in colour.

Examination of samples taken from any portion of supply shall show that the material confirms to the following requirements:-

.....2/-

3. KEEPING PROPERTY CUM VARANTY CLAUSE

The material shall retain the properties stipulated above for a period not less than 12 months from the date of delivery at the consignee's end when stored in its original containers.

The contractor shall render a guarantee certificate for replacing the material, with material conforming to specification free of cost at consignee's end, in case the material deteriorates or losses its properties during the above period.

Table

Sl No.	Test	Requirement	Method of test (Ref. to Appendix)
i)	Volatile Matter, percent, Max	0.3	A
ii)	Matter Soluble in water, percent, Max	0.1	B
iii)	Ash percent, Max	0.1	C
iv)	pH value of aqueous extract	Not lower than 5.0 nor higher than 8.0	D
v)	Acid Value Max	1	E
vi)	Ammonia & Ammonium Compounds	To pass test	F
vii)	Saponification Value, Max	101	G
viii)	Water by Dean & Stark method, percent, Max	0.2	
ix)	Sulphur	The material shall cause no pitting or etching or discolouration of the copper strip.	H

Packaging

4 ~~3~~ Materials

a) Pack A (Standard Pack)

Drums, Paint, 15 litre, Cat.No.IHA 1028 fitted with 100 mm closure — Conforming to type B_2 of *IS:2552-~~1963~~, material to be M.S. sheet

b) Pack B (Alternative Pack)

Drums M.S. 15 litre — Trade quality Drums fabricated from good quality mild steel sheet of 1.25 mm. ~~24 B G~~ 0.63mm provided with at least ~~12.5~~ cm wide opening at the top and fitted with a push fit lever lid. The drums shall be sound, strong in construction and suitable for rail/road transit. It shall be leakproof at all joints and closure. The drum shall be capable of holding 15 kg of the material with ~~5%~~ 15 percent minimum ullage.

.....3/-

The store shall be supplied in sound, clean, dry and rust-free drums. The closure shall be tightly secured in position so as to give a liquid tight closure. The drums shall be sound and capable of rough handling during transit. Drums shall be provided with a strap handle in the centre of the top end, not projecting beyond the top rim of the drum. Each container shall contain the same net ~~weight~~ mass of the material i.e. 15 kg. The drums shall be painted externally with Paint PFU War Equipment Brushing Air Drying Olive Green Scamic 314 (Cat. No. IHA 0228).

The container shall be legibly and indelibly marked as under:-

i) Nomenclature and catalogue No. of the store

ii) Quantity packed preceded by abbreviation ~~QTY~~ (i.e. ~~QTY~~ 15 kg)

iii) Net and gross ~~weights~~ masses of the package preceded by the abbreviation kg

iv) Manufacturer's/supplier's name, initials or recognised trade mark

v) Date of manufacture

vi) Contract number and date

vii) Name and address of consignee

viii) Type of Pack (Pack A or Pack B)

(X) Dispection note number & Date

In f.o.r. contracts the packaging and marking as given above and despatch of the inspected material shall be done by the contractor.

Note:- If, ordered for delivery to a local Inspection Depot, the filled, sealed and marked containers shall be delivered. After inspection, the material shall be despatched by the Inspection Depot authorities.

Pre-Inspection by the supplier

5-4 Before tendering the stores to the Government Inspector, the supplier will carry out a thorough pre-inspection of each delivery to satisfy himself that the stores fully conform to this specification.

Inspection

5. If on examination of any sample from any portion of a supply, the material is found to be not fully conforming to this specification, the whole supply may be rejected.

Certified copy of the sealed specification at this date.

KANPUR:
DATED : 196 .

for D I R E C T O R
DEFENCE RESEARCH LABORATORY (MATERIALS)

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*Indian Standard Specifications are priced publications and can be obtained on payment from the Indian Standards Institution Manak Bhavan, 9, Bahadur Shah Zafar Marg, New Delhi-1, as well as from regional branches of ISI in other cities of India.

APPENDIX A

Method for the determination of Volatile Matter

Weigh accurately 10 g of the sample into a tared petri dish. Place the petri dish in an air oven approximately for an hour at ~~105° ± 1°C~~ 105°C ± 1 degree C. Transfer the dish from the oven to a desiccator, cool and weigh. Repeat this procedure keeping the petri dish in the oven for half an hour each time until the successive weighings do not differ by more than one milligram.

$$\text{Volatile Matter, percent by ~~weight~~ mass} = \frac{100 \times W_1 m_1}{W_2 m_2}$$

where

m_1 W_1 = Loss in ~~weight~~ mass in g of the material

m_2 W_2 = ~~Weight~~ Mass in g of the sample taken

APPENDIX B

Method for the determination of matter soluble in water

Boil 20 g of the sample with 200 ml of neutral distilled water for 5 minutes. Allow to cool, make up the volume to 250 ml with distilled water. Mix thoroughly and allow to stand. Filter through No.4 filter paper. Reject the first 100 ml of the filtrate. Transfer another 100 ml of the filtrate into a round bottom dish and allow to evaporate on a water bath. Dry the residue to constant ~~weight~~ mass in an oven maintained at 110°C.

(N.B. Reserve the excess of the filtrate for determination of Ammonia and Ammonium compounds in Appendix F).

$$\text{Matter Soluble in Water, percent by mass} = \frac{m_1 W_1 \times 2.5 \times 100}{m_2 W_2}$$

where

m_1 W_1 = mass of the residue in 100 ml of the filtrate

m_2 W_2 = mass of the sample taken

APPENDIX C

Method for determination of Ash

Weigh approximately 10 g of the material accurately into a tared silica dish. Heat the dish first by playing the flame of the bunsen burner on the surface. Oil is allowed to burn away quietly. Then keep the dish in a muffle furnace at dull red heat until all carbonacious matter is consumed. The dish is then heated to constant ~~weight~~ mass.

$$\text{Ash percent} \quad \frac{100 \times m_1 W_1}{m_2 W_2}$$

where

m_1 W_1 = ~~weight~~ mass in g of the ash

m_2 W_2 = ~~weight~~ mass in g of the material taken for test

APPENDIX D

Method for the determination of pH value of aqueous extract

Boil 20 g of the sample for 5 minutes with 200 ml of distilled water cool the mixture to room temperature and allow to stand. When the liquid is clear, decant. Determine the pH value of the decanted Liquor electrometrically by means of a pH meter equipped with a glass electrode and a calomel half cell.

Distilled water free from carbon dioxide and having a conductivity not greater than ~~2 mho/cm~~ 200 s/m shall be used.

APPENDIX E

Method for the determination of Acid Value

Weigh accurately 10 g of the material in a 250 ml flask. Add 100 ml of freshly neutralised ethyl alcohol and 1 ml of phenolphthalein indicator solution. Boil the mixture for 5 minutes and titrate while as hot as possible with standard ~~N/10~~ 0.1N aqueous KOH (or NaOH) solution shaking vigorously during the titration.

$$\text{Acid value} = \frac{56.1 \times VN}{\text{~~W~~ m}}$$

where

V = Vol in ml of ~~N/10~~ 0.1N alkali required

N = normality of alkali solution

m ~~W~~ = ~~weight~~ mass in g of the sample taken for test

APPENDIX F

Test for Ammonia and Ammonium Compounds

Transfer 25 ml of the filtrate from Appendix B into a 50 ml Nessler's Cylinder and add a few drops of Nessler's reagent. No brown colour shall develop.

APPENDIX G

Method for determination of Saponification Value

Mix the sample thoroughly and weigh accurately by difference about 1.8 to 2.0 g of the sample in a conical flask. Add 25 ml of the alcoholic potassium hydroxide solution (N/2) and connect the reflux air condenser to the flask. Heat the flask on a water bath or on an electric hot plate for about an hour. Boil gently but steadily until the sample is completely saponified as indicated by absence of any oily matter and appearance of clear solution. After the flask and condenser have cooled some what, wash down the inside of the condenser with about 10 ml of hot ethyl alcohol neutral to phenolphthalein. Add about 1 ml of phenolphthalein indicator solution and titrate with standard ~~N/2~~ 0·5N hydrochloric acid. Carry out a blank at the same time.

$$\text{Saponification Value} = \frac{56.1 \times (B-S)N}{W \;\; m}$$

where

B = volume of standard N/2 Hydrochloric Acid for Blank

S = volume of standard ~~N/2~~ 0·5N Hydrochloric Acid for Sample

m ~~W~~ = ~~weight~~ mass of the sample taken

N = normality of the standard Hydrochloric Acid

APPENDIX-H

Method for the determination of deleterious sulphur

Polish strips of pure sheet copper ~~7.5~~ 75 mm and 12·5 mm in length ~~1.25~~ cm in width (~~3" x ½"~~) mechanically on both sides to obtain a uniform finish, free from defects, clean and polish the strips with a pad of cotton wool and the silicon carbide powder and then with successive pads ofcotton wool until a fresh pad remains unsoiled after use. Wash the strip with acetone and allow to dry. Use clean metal forceps for all further handling of the strip.

Immerse a strip of copper to a depth of ~~5 cm (2 inch)~~ 50 mm in a 20 percent solution by ~~weight~~ mass of the sample in petroleum hydrocarbon solvent (white spirit) conforming to the requirements of Indian Standard Specifiation Number IS:1745-~~61~~ for solvent 145/205 (Low Aromatic) contained in a glass test tube. Close the test tube with a vented cork and allow to stand in a vertical position at room temperature. Remove the strip after 24 hours, wash with petroleum hydrocarbon solvent and compare with similar strips of freshly cleaned and polished copper.

IND/SL/2804

RBS.

Checked
R N Bhattacharyya
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