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GOVERNMENT OF INDIA
MINISTRY OF DEFENCE (DGQA)
CONTROLLERATE OF QUALITY
ASSURANCE(MILITARY EXPLOSIVES)
AUNDH ROAD, KIRKEE, PUNE : 411 003

No. CQA(ME)/4338/SO/4

01 Feb 2000

TO
ORDFEX BHANDARA 441 906

REPEATED
GUNATA AYUDH MUMBAI - 400 083

WAX CERESINE GRADE 80 [.] REF YR FAX PV/SP/1/98/883/RM/BF DATED 20-1-2000 [.] SPECN TO BE FOLLOWED IS GOST 2488-79 [.] REF AAIW/BH FAX NO AAIW/BH/03 DATED JAN 25 [.] HENCE THE RECOMMENDATION FOR REJECTION INTIMATED VIDE THIS OFFICE TEL NO CQA(ME)/4338/SO/03 DT 17-09-99 STANDS [.]

To

The General Manager
Ordnance Factory
BHANDARA - 441 906.

Ref. i) Your fax No. PV/SP/1/98/883/RM/BF dt. 20-1-2000.
ii) AAIW/BH Fax No AAIW/BH/03 dt. Jan 25.
iii) M/S Waxoil Pvt Ltd. letter No. WPL/884/99-2000 dt. 11th Jan 2000
(Addressed to you & Copy endorsed to this office)

Post copy forwarded in confirmation.

(Mrs. S S KAKADE)
Asstt. Controller
For Controller CQA(ME), Kirkee

Copy to :-

The Officer In-charge
A.A.I.W.
KHAMARIA.

The Officedr In-charge
A.A.I.W.
BHANDARA.

The Sr. Quality Assurance Officer
Sr. Quality Assurance Estt. (Armts)
DGQA Complex, L.B.S Marg,
VIKHROLI, MUMBAI - 400 083.

O.F. BHANDARA
No. 7545
Dt.

JWM/WI
Encl (5)

Encl to CQA(ME) Letter No. CQA(ME)/7200/GEN/21 dt 15th Nov 99

Copy No 2 - WT

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CEREBINE TECHNICAL SPECIFICATIONS

GOST 2488-79

Translated by	Authenticated by	ARMOURED VEHICLE PROJECT AVADI	
HYDERABAD	A.K.KUNDU		
Date	Compiled by	SPECIFICATION No. GOST 2488-79	
03.10.85			
		Page No. 1 of 9	Approved by

Translated and Edited by K.A.PARTHASARATHY

Date AUGUST 1985

Checked/ authenticated by D.[illegible]
Name; A.K.KUNDU
Signature
Date 3.10.85

UDC 665.432:006.354 Group B42 (B 42)

USSR STATE STANDARD

CERESINE

TECHNICAL SPECIFICATIONS

Valid upto 01.01.1986

GOST 2488-79
This supersedes
GOST 2488-73

The present standard relates to ceresine - mixture of solid hydrocarbons prepared by acid contact refining of crude petro-ceresine, paraffin cork or their mixture in any ratio.

Ceresine is used in the manufacture of lubricants, fusible wax insulating materials and for other purposes.

The standard does not relate to ceresine used in the food industry.

1. TECHNICAL REQUIREMENTS

1.1 Ceresine must be manufactured in accordance with the requirements of the present standard and to a technological process approved in the established manner.

1.2 Ceresines are graded as 65, 70, 75 and 80 depending on their drop point.

1.3 Ceresine must conform to the requirements and norms shown in the Table 1 in respect of physical and chemical parameters.

Ceresine wax (Elec., etc.). Bleached or refined ozocerite (q.v.), obtained by heating the latter with charcoal and concentrated sulphuric acid

Ozocerite (Min.). A mineral paraffin wax, of dark yellow, brown, or black colour, m.p. 55°-110°C, rel. d. 0.85 to 0.95, soluble in petrol, benzene, turpentine; it is found in Galicia and near the Caspian Sea. When bleached, it forms ceresine wax (q.v.). Also ozokerite.

Table 1

Parameter	Norms for grades				Method of testing
	65	70	75	80	
1. External appearance	A homogeneous mass without visible mechanical impurities				Visual
2. Drop point, °C	65 to 70	70 to 75	75 to 80	80 to 85	As per GOST 6793-74
3. Penetration depth of needle, 0.1 mm, not more than	30	25	18	16	As per GOST 23683-79 read with clause 4.2 of the present standard
4. Mechanical impurities content by weight, %, not more than	0.02	0.02	0.02	0.02	As per GOST 6370-59 read with clause 4.3 of the present standard
5. Proportion of water	Absent				As per GOST 2477-65
6. Ash content by weight, %, not more than	0.02	0.02	0.02	0.02	As per GOST 1461-75
7. Acid number, mg of KOH per gram of ceresine, not more than	0.1	0.1	0.1	0.1	As per clause 4.4
8. Proportion of water-soluble acids and alkalis	Absent				As per GOST 6307-75
9. Colour, TsNT units, not more than	5	5	5	5	As per GOST 20284-74
10. Volume resistivity at 100°C, ohm. cm, not more than	-	-	-	1.10^{12}	As per GOST 6581-75
11. Dissipation factor at 100°C and 1000 Hz not more than	-	-	-	0.003	As per GOST 22372-77

Note: Ash content by weight of ceresine grade 80, intended for factories of the electronic industry, must not be more than 0.01%.

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2. SAFETY REQUIREMENTS

2.1 Personal protection aids conforming to typical industry-wide norms approved by the USSR State Committee on labour and social problems and by the Presidium of the All-Union Central Council of Trade Unions must be used while handling ceresine.

2.2 Premises in which ceresine is handled must be provided with plenum - exhaust ventilation.

2.3 Ceresine does not contain volatile components. Boiling point of ceresine is above 400°C and flash point 250°C.

2.4 Direct contact of ceresine with open fire is not allowed.

All fire fighting media may be used if ceresine catches fire.

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3. ACCEPTANCE RULES

3.1 Ceresine is accepted in batches. Any quantity of ceresine with uniform quality indices accompanied by a single quality certificate constitutes a batch.

3.2 GOST 2517-69 defines sampling scale.

3.3 Volume resistivity and dissipation factor are determined for ceresine grade 80, used in factories of the electronic industry and in the production of electro-insulating wax compositions.

3.4 If unsatisfactory test results are obtained in respect of even a single parameter, the particular test is repeated on a freshly drawn specimen prepared from twice the number of samples.

Results of the repeat test are applicable to the whole batch.

4. METHODS OF TESTING

4.1 Samples of ceresine are drawn in accordance with GOST 2517-69. One litre of each grade of ceresine is drawn for control testing.

4.2 Needle penetration depth is determined in accordance with section 5 of GOST 23683-79, for which ceresine is melted down in an evaporating dish by heating it upto 90°C. After cooling the ceresine

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for one hour, it is held for 2 hours in a crystallizer at 25°C.

4.3 Mechanical impurities content by weight is determined in accordance with GOST 6370-59, for which 5 grams of ceresine is weighed with error not exceeding 0.01 gm in a conical flask and heated with 50 millilitres of petrol (Benzene) till ceresine dissolves completely.

4.4 DETERMINATION OF ACID NUMBER

4.4.1 REAGENTS AND SOLUTIONS USED

250 ml Conical flasks conforming to GOST 10394-72.

Laboratory glass coolers in accordance with GOST 9499-70.

Cylinders with handle-capacity 25, 50 and 100 millilitres in accordance with GOST 1770-74.

Microburette with 1 millilitre capacity in accordance with GOST 20292-74

Sand glasses for 5 minutes or signal clocks.

Technical ethyl alcohol in accordance with GOST 17299-78,

Technical rectified ethyl alcohol in accordance with GOST 18300-72 or synthetic ethyl alcohol in accordance with GOST 11547-76.

Petrol (Benzene) in accordance with GOST 443-76.

Potassium hydroxide chemically pure or pure for analytical purposes, 0.02 N alcohol solution.

Phenolphthalein (indicator) in accordance with GOST 5850-72, 1% alcohol solution. Distilled water in accordance with GOST 6709-72.

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4.4.2 PREPARATION FOR TESTING

Alcohol-petrol (benzene) mixture in 1:4 ratio is prepared in a stoppered flask.

4.4.3 TESTING PROCEDURE

Five to six grams of ceresine are weighed in a 250 ml conical flask with error not exceeding 0.01 gm. Eighty grams of alcohol-petrol mixture is boiled for 5 minutes in a flask fitted with a cooler and is neutralized in the hot condition with an alcohol solution of potassium hydroxide till Phenolphthalein turns light rose. The neutralized mixture is poured into a

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flask containing a weighed portion of ceresine. The contents of the flask are boiled for a further 5 minutes after complete dissolution of the ceresine. Four to five drops of phenolphthalein are added to the mixture and holding it in the hot condition, it is titrated with alcohol solution of potassium hydroxide and stirred continuously till the first change of colour of the mixture (from colourless to light rose).

4.4.4 PROCESSING OF RESULTS

Acid number of ceresine (X) in miligrams of KOH per gram is calculated using the formula:

$$X = \frac{V.1.12}{m}$$

where, V is the colume in miligram of an exactly 0.02 N potassium hydroxide solution used for titration and

m is the weight of the ceresine batch in grams.

1.12 is the quantity of acid corresponding to 0.02 N solution of potassium hydroxide.

The arithmetic mean of two parallel tests is taken as the test result. The permissible differences between them must not exceed the values shown in Table 2.

Table 2

Acid number, miligram KOH per gram of ceresine	Permissible difference, miligram per gram of ceresine
Upto 0.1	0.01
Above 0.1	0.05

5. PACKING, MARKING, TRANSPORT AND STORAGE

5.1 GOST 1510-76 with following additional stipulation defines packing, marking, transport and storage:

Ceresine grade 80 used in factories of the electronic industry and in the production of electro-insulating wax compositions is packed in paper bags inserted into calico bags.

Ceresine must be stored in the manufacturer's container.

5.2 A facsimile of the state quality mark should be stamped in accordance with GOST 1.9-67 on the document certifying the quality of ceresine and on its container if state quality mark has been awarded to the ceresine in the established manner.

6. MANUFACTURER'S GUARANTEE

6.1 The manufacturer guarantees conformity of the ceresine with the requirements of the present standard, provided the storage conditior are observed.

6.2 Guaranteed shelf life is two years from the date of manufactu

After the expiry of the guaranteed shelf life and before use, ceresine must be checked for conformity with the requirements of the present standard.

BASE SI UNITS

Quantity	Unit		
	Name	Russian symbol	International symbol
Length	metre	м	m
Height (Mass)	Kilogram	кг	kg
Time	second	с	s
Current	ampere	А	A
Thermodynamic temperature	kelvin	К	K
Amount of substance	mole	моль	mol
Intensity of light	candela	кд	cd

SUPPLEMENTARY SI UNITS

Plane angle	radian	рад	rad
Solid angle	steradian	ср	sr

DERIVED SI UNITS WITH PROPRIETORY NAMES

Quantity	Unit		Expression for derived unit	
	Name	Symbol	using other units	using base SI units
Frequency	hertz	Hz	-	s^{-1}
Force	newton	N	-	$m, kg. s^{-2}$
Pressure	pascal	Pa	N/m^2	$m^{-1}, kg. s^{-2}$
Energy, work, heat	joule	J	N.m	$m^2, kg. s^{-2}$
Power, energy, flow	watt	W	J/s	$m^2, kg. s^{-3}$
Quantity of electricity, electric charge	coulomb	C	A.s	s.A
Electric potential	volt	V	W/A	$m^2, kg. s^{-3} A^{-1}$
Electric capacitance	farad	F	C/V	$m^{-2}, kg^{-1} s^4 A^2$
Electric resistance	ohm	Ω	V/A	$m^2, kg. s^{-3} A^{-2}$
Conductance	siemens	S	A/V	$m^{-2}, kg^{-1} s^3 A^2$
Magnetic flux	weber	Wb	V.s	$m^2, kg. s^{-2} A^{-1}$
Magnetic induction	tesla	T	Wb/m^2	$kg. s^{-2} A^{-1}$
Inductance	henry	H	Wb/A	$m^2, kg. s^{-2} A^{-2}$
Luminous flux	lumen	lm	-	cd.sr. *
Illumination	lux	lx	-	m^{-2}.cd.sr.*
Nucleid activity	beckerel	bk	-	s^{-1}
Radiation dosage	grey	gr	-	$m^2 s^{-2}$

* The supplementary unit steradian figures along with base SI units in these two expressions.