

Laboratory	High Explosives Factory Laboratory, I.O.F., Ministry of Defence, Khadki, Pune, Maharashtra		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	06.07.2015
Certificate Number	T-0003	Valid Until	05.07.2017
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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I.	EXPLOSIVES			
1.	CE Crystalline Dense	Volatile Matter %	JSS 1375 -01: 2012 (Rev. 2) Appendix A	0.005 % to 0.2 %
		Matter Insoluble in Benzene	Appendix B	0.005 % to 0.1 %
		Matter Insoluble in Acetone %	Appendix C	0.001 % to 0.01%
		Acidity as Hno3 %	Appendix D	0.0006 % to 0.005 %
		Melting Point in °C	Appendix E	125 to 129.5
		Vacuum Stability Test in ml/g at 120 °C for 40 h	Appendix G	0 to 14 ML
		Sieving	Appendix H	Nil Passing Through 425 Microns
2.	Ce Granulated 1.18 mm / 150 mm (14/100 BSS)	Volatile Mater %	JSS 1375 -01: 2012 (Rev. 2) Appendix A	0.005 % to 0.2 %
		Matter Insoluble In Acetone %	Appendix C	0.001 % to 0.01 %
		Sieving	Appendix H	100 % Passing Through 1.18 Micron 90 % to 100 % Retention on 150 Microns
3.	CE Wet Gran	Matter Insoluble in Benzene	JSS 1375-01: 2012 (Rev. 2) Appendix B	0.005 % to 0.2 %
		Matter Insoluble in Acetone %	Appendix C	0.001 % to 0.01 %

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	CE Wet Gran	Acidity as HNO ₃ %	Appendix D	0.0006 % to 0.005 %
		Melting Point in °C	Appendix E	125 °C to 129.5 °C
		Vacuum Stability Test in ml/g at 120 °C For 40 h	Appendix G	0 to 14 ml
4.	CE Granulated 425 Microns / 150 Microns (36 / 100)	Volatile Mater %	JSS 1375-01: 2012 (Rev. 2) Appendix A	0.005 % to 0.2 %
		Matter Insoluble In Acetone %	Appendix C	0.005 % to 0.2 %
		Sieving	Appendix H	100 % Passing Through 425 Microns 90 % to 100 % Retention on 150 Microns
5.	TNT	Setting Point	JSS 1376-02: 2012 (Rev. 4) Appendix A	79.5 °C to 80.8 °C
		Acidity As H ₂ SO ₄ %	Appendix B	0.0005 % to 0.02 %
		Moisture Content %	IS 2362: 1973	0.005 % to 0.2 %
		Sulphated Ash %	Appendix C	0.01 % to 0.1 %
		Organic Matter Insoluble In Toluene	Appendix D	0.005 % to 0.1 %
		Total Sodium As Na%	Appendix F	0.0001 % to 0.01 %
		Particle Size	Appendix G	0.001 mm to 1 mm

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6.	DNT	Setting Point	JSS 1376-04: 2014 (Rev. 3)	53 °C to 72 °C
		Acidity As H ₂ SO ₄ %	Appendix B Appendix E	0.0005 % to 0.02 %
		Volatile Matter %	Appendix A	0.01 % to 0.4 %
		Sulphated Ash %	Appendix C	0.01 % to 0.2 %
		Matter Insoluble In Benzene	Appendix D	0.005 % to 0.2 %
II. INDUSTRIAL & FINE CHEMICALS				
1.	Caustic Soda	Sodium Carbonate as Na ₂ CO ₃ %	IS 252: 1991 (RA 2010) Clause A 3	0.027 % to 0.5 %
		Caustic Soda as NaOH %	Clause A 4	95 % to 100 %
2.	Copper Sulphate	Copper Content %	IS 261: 1982 (RA 2010) Clause A 2	20.0 % to 26.0 %
		Ph OF 5 % Aqueous Extract	Clause A 5	2.5 to 5.5
3.	Magnesium Sulphate	Magnesium Sulphate As MgSO ₄	IS 2730: 1977 (RA 2010) As Per Analar Book Method Page No. 307 Annexure 2	95 % to 102 %
4.	Soda Ash	Purity or Total Alkalinity as Na ₂ CO ₃ %	IS 251: 1998 (RA 2010) Clause C 3	95 % to 100 %
5.	Sodium Sulphite	Sodium Sulphite Content %.	IS 247: 1987 (RA 2010) Clause A 2	80 % to 98 %
		pH of Aqueous Sol ⁿ	Clause A 4	8.0 to 10.5

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6.	Sodium Nitrite	Sodium Nitrite Content %	JSS 6810-104: 2005 IS 879: 1981 (RA 1999) Appendix B	97.5 % to 100 %
7.	Sodium Bi - Sulphite	Purity As SO ₂ % Content	IS 248: 1987 (RA 2010) Clause A 2	60 % to 62 %
		pH OF 5 % Solution	Clause A 3	4.5 to 6.0
8.	Sodium Sulphate	Sodium Sulphate Content As Na ₂ SO ₄ %	IS 255: 1982 (RA 2010) Clause A 3	95 % to 99.9 %
		pH OF 10 % Aqueous Solution	Clause A 9	7 to 8
9.	Sodium Hypochlorite	Available Chlorine Content%	IS 11673: 1992 (RA 2010) Clause A 3	11 % to 16 %
10.	Sodium Thiosulphate	Sodium Thiosulphate Content %	IS 246: 1986 (RA 2008) Clause A 2	95 % to 101 %
		pH OF 10 % Aqueous Solution	Clause A 3	6.5 % to 9.0 %
11.	Hydrochloric Acid	Total Acidity As HCl Content %	IS 265: 1993 (RA 2010) Clause B 2	30 % to 36 %
12.	Nitric Acid	Total Acidity as HNO ₃	IS 264: 2005 (RA 2010) Clause A 2	90 % to 99.5 %
		Nitrous Acid as HNO ₂	Clause A 7	0 to 0.2 %
13.	Sulphuric Acid	Total Acidity as H ₂ SO ₄ %	IS 266: 1993 (RA 2010) Clause A 2	92 % to 100 %
14.	Acetic Acid	Acetic Acid Content	IS 695: 1986 (RA 2002) Rev. 3 Clause A 2	96 % to 101 %
		Crystallising Point In °C	Clause A 3	15.2 °C to 16.5 °C

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15.	Oleum	Free Sulphur Trioxide %	IS 1089: 1986 (RA 2003) Rev. 2 Clause A 2	18 % to 28 %
16.	R.F.N.A (Red Fuming Nitric Acid)	Total Acidity as HNO ₃ %	DRDL / TTD / DOC/ P / C /009 (Rev. 4) Clause (ii) of 4.4	102 % to 115 %
		Oxides Of Nitrogen %	Clause (iii) of 4.4	16.5 % to 24.0 %
17.	Amino Guanidine Bicarbonate (AGBC)	Purity as AGBC %	JSS 6810-40: 2009 (Rev 2) Appendix A	96 % to 99.9 %
		Sulphated Ash Content %	JSS 0112: 1991 Method. 2(b)	0.02 % to 0.5 %
18.	Amino Guanidinium Sulphate (AGS)	ASH CONTENT %	IND / ME / 986 (PROV) JSG 0112: 1991 Method 2 (a)	0.01 % to 0.07 %
		Zinc Content %	Appendix E	0.001 % to 0.05 %
		pH OF 15.2 % Aqueous Solution	JSG 0112: 1991 Method 5 (b)	4.0 to 5.5
		Melting Point in °K	Appendix B	470 °K to 478 °K
19.	Styphnic Acid	Sulphates as Na ₂ SO ₄ %	JSS 6810-49: 2012 (Rev 3) Appendix F	0.006 % to 0.1 %
		Melting Point in °C	Appendix C	170 °C to 180 °C
		Moisture Content %	Appendix A	14 % to 25 %
		Matter Insoluble In Benzene %	Appendix D (i)	0.01 % to 2.5 %

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III. POLLUTION & EFFLUENTS				
1.	Effluents	pH of Sample	IS 3025 (Part 2): 1983 (RA 1996)	4 to 10
		Suspended Solids	IS 3025 (Part 17): 1984 (RA 2012)	500 mg/l MAX
		Biological Oxygen Demand (BOD)	IS 3025 (Part 44): 1993 (RA 2009)	1 mg/l to 100 mg/l At 27 °C for 3 days
		Chemical Oxygen Demand (COD)	IS 3025 (Part 58): 2006	2 mg/l to 250 mg/l
		Dissolved Oxygen	IS 3025 (Part 38): 1989 (RA 2003)	4 mg/l to 9 mg/l
		Oil and Grease	IS 3025 (Part 39): 1991 (RA 2003)	1 mg/l to 10 mg/l
		Ammonical Nitrogen	IS 3025 (Part 34): 1988 (RA 2003)	0.1 mg/l to 10 mg/l

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