

<b>Laboratory</b>	<b>High Explosives Factory Laboratory, I.O.F., Ministry of Defence, Khadki, Pune, Maharashtra</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Chemical Testing</b>	<b>Issue Date</b>	<b>06.07.2015</b>
<b>Certificate Number</b>	<b>T-0003</b>	<b>Valid Until</b>	<b>05.07.2017</b>
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<b>S. No.</b>	<b>Product / Material of Test</b>	<b>Specific Test Performed</b>	<b>Test Method Specification against which tests are performed</b>	<b>Range of Testing / Limits of Detection</b>
<b>I.</b>	<b>EXPLOSIVES</b>			
<b>1.</b>	<b>CE Crystalline Dense</b>	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
<b>2.</b>	<b>Ce Granulated 1.18 mm / 150 mm (14/100 BSS )</b>	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
<b>3.</b>	<b>CE Wet Gran</b>	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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	<b>CE Wet Gran</b>	Acidity as HNO <sub>3</sub> %	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
<b>4.</b>	<b>CE Granulated 425 Microns / 150 Microns ( 36 / 100 )</b>	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
<b>5.</b>	<b>TNT</b>	Setting Point	JSS 1376-02: 2012 (Rev. 4) Appendix A	79.5 °C to 80.8 °C
		Acidity as H <sub>2</sub> SO <sub>4</sub> %	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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<b>6.</b>	<b>DNT</b>	Setting Point	JSS 1376-04: 2014 (Rev. 3)	53 °C to 72 °C
		Acidity As H <sub>2</sub> SO <sub>4</sub> %	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 %
<b>II. INDUSTRIAL &amp; FINE CHEMICALS</b>				
<b>1.</b>	<b>Caustic Soda</b>	Sodium Carbonate as Na <sub>2</sub> CO <sub>3</sub> %	IS 252: 1991 (RA 2010) Clause A 3	0.027 % to 0.5 %
		Caustic Soda as NaOH %	Clause A 4	95 % to 100 %
<b>2.</b>	<b>Copper Sulphate</b>	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
<b>3.</b>	<b>Magnesium Sulphate</b>	Magnesium Sulphate As MgSO <sub>4</sub>	IS 2730: 1977 (RA 2010) As Per Analar Book Method Page No. 307 Annexure 2	95 % to 102 %
<b>4.</b>	<b>Soda Ash</b>	Purity or Total Alkalinity as Na <sub>2</sub> CO <sub>3</sub> %	IS 251: 1998 (RA 2010) Clause C 3	95 % to 100 %
<b>5.</b>	<b>Sodium Sulphite</b>	Sodium Sulphite Content %.	IS 247: 1987 (RA 2010) Clause A 2	80 % to 98 %
		pH of Aqueous Sol <sup>n</sup>	Clause A 4	8.0 to 10.5

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6.	<b>Sodium Nitrite</b>	Sodium Nitrite Content %	JSS 6810-104: 2005 IS 879: 1981 (RA 1999) Appendix B	97.5 % to 100 %
7.	<b>Sodium Bi - Sulphite</b>	Purity As SO <sub>2</sub> % 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.	<b>Sodium Sulphate</b>	Sodium Sulphate Content As Na <sub>2</sub> SO <sub>4</sub> %	IS 255: 1982 (RA 2010) Clause A 3	95 % to 99.9 %
		pH OF 10 % Aqueous Solution	Clause A 9	7 to 8
9.	<b>Sodium Hypochlorite</b>	Available Chlorine Content%	IS 11673: 1992 (RA 2010) Clause A 3	11 % to 16 %
10.	<b>Sodium Thiosulphate</b>	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.	<b>Hydrochloric Acid</b>	Total Acidity As HCl Content %	IS 265: 1993 (RA 2010) Clause B 2	30 % to 36 %
12.	<b>Nitric Acid</b>	Total Acidity as HNO <sub>3</sub>	IS 264: 2005 (RA 2010) Clause A 2	90 % to 99.5 %
		Nitrous Acid as HNO <sub>2</sub>	Clause A 7	0 to 0.2 %
13.	<b>Sulphuric Acid</b>	Total Acidity as H <sub>2</sub> SO <sub>4</sub> %	IS 266: 1993 (RA 2010) Clause A 2	92 % to 100 %
14.	<b>Acetic Acid</b>	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.	<b>Oleum</b>	Free Sulphur Trioxide %	IS 1089: 1986 (RA 2003) Rev. 2 Clause A 2	18 % to 28 %
16.	<b>R.F.N.A (Red Fuming Nitric Acid)</b>	Total Acidity as HNO <sub>3</sub> %	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.	<b>Amino Guanidine Bicarbonate (AGBC)</b>	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.	<b>Amino Guanidinium Sulphate (AGS)</b>	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.	<b>Styphnic Acid</b>	Sulphates as Na <sub>2</sub> SO <sub>4</sub> %	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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<b>III. POLLUTION &amp; EFFLUENTS</b>				
<b>1.</b>	<b>Effluents</b>	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
<b>IV. AIR, GASES AND ATMOSPHERE</b>				
<b>1.</b>	<b>Ambient Air Monitoring</b>	Sulphur Di-Oxide	IS 5182 (Part 2 ): 2001 (RA 2012 ) Method 3	1 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>
		Nitrogen Oxides	IS 5182 (Part 6 ): 2006 (RA 2012 ) Method 3	1 µg/m <sup>3</sup> to 100 µg/m <sup>3</sup>

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