

Laboratory **Quality Control Laboratory, Ordnance Factory Badmal, P.O. Badmal, Distt : Balangir, Odisha**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7187 (in lieu of T-1063)**

Page 1 of 9

Validity **22.04.2018 to 21.04.2020**

Last Amended on **26.04.2018**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-----	----------------------------	-------------------------	---	--

CHEMICAL TESTING

I. EXPLOSIVES & PYROTECHNICS				
1.	Pyrotechnics			
A.	S - 243 Composition	Volatile Matter	IND/ ME/ 993, Appendix-A	0.01 % to 0.7 %
		Rosin	IND/ ME/ 993, Appendix-B	0.1 % to 4.0 %
		Phenol Formaldehyde	IND/ ME/ 993, Appendix-B	0.1 % to 10.0 %
		Strontium Nitrate	IND/ ME/ 993, Appendix-B	1.0 % to 55.0 %
		Magnesium	IND/ ME/ 993, Appendix-B	1.0 % to 40.0 %
		Cryolite	IND/ ME/ 993, Appendix-B	0.5 % to 12.0 %
		Graphite	IND/ ME/ 993, Appendix-B	0.1 % to 1.5 %
		Passing through 850 Micron IS Sieve	IND/ ME/ 993, Appendix-C	Up to 100 %
B.	BT - 4 Composition	Volatile Matter	IND/ ME/ 992 (Prov.) Clause No. 7.2	0.01 % to 5.0 %
		Phenol Formaldehyde	IND/ ME/ 992 (Prov.) Clause No. 7.3	0.1 % to 15.0 %
		Barium Nitrate	IND/ ME/ 992 (Prov.) Clause No. 7.3	1.0 % to 30.0%
		Magnesium	IND/ ME/ 992 (Prov.) Clause No. 7.3	0.1 % to 20.0 %
		Barium Peroxide	IND/ ME/ 992 (Prov.) Clause No. 7.3	1.0 % to 60.0 %
		Passing through 600 Micron IS Sieve	IND/ ME/ 992 (Prov.) Clause No. 7.4	Up to 100 %
C.	ME - 412 Composition	Volatile Matter	JSG 0112, Method 1(a)	0.01 % to 5.0 %
		N.C.Content	IND/ ME/ 820, Appendix - C	0.1 % to 10.0 %
		Potassium Perchlorate	IND/ ME/ 820, Appendix - C	0.1 % to 15.0 %
		Barium Chromate	IND/ ME/ 820, Appendix - C	1.0 % to 80.0 %

Laboratory **Quality Control Laboratory, Ordnance Factory Badmal, P.O. Badmal, Distt : Balangir, Odisha**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7187 (in lieu of T-1063)**

Page 2 of 9

Validity **22.04.2018 to 21.04.2020**

Last Amended on **26.04.2018**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Antimony Sulphide	IND/ ME/ 820, Appendix - C	1.0 % to 30.0 %
D.	CU - 1 Composition	APC-217	IND/ ME/ 950(a) Appendix-B	0.01 % to 5.0 %
		Red Lead	IND/ ME/ 950(a) Appendix-B	1.0 % to 80.0 %
		Zirconium Powder	IND/ ME/ 950(a) Appendix-B	1.0 % to 30.0 %
2.	Initiators & Initiatory Compositions			
A.	Dextrinated Lead Azide	Lead Azide Content	GOST : 1905 - 69 Clause No. 2.7	90 % to 99 %
B.	Pure Lead Azide	Lead Azide Content	JSS 1376 - 09, Appendix - B	90 % to 99 %
		pH of Water extract	JSS 1376 - 09, Appendix - C	1 to 14
C.	Lead Styphnate	Lead Content	JSS 1375 - 06, Appendix - C	40 % to 50 %
3.	Explosive chemicals & allied materials			
A.	Sodium Azide Solution	Concentration	WI/ OFBL/ QCL/ 04 Issue No. 01 Issue Date : 04.03.2016	15 g/L to 30 g/L
		pH	WI/ OFBL/ QCL/ 03 Issue No. 01 Issue Date : 04.03.2016	1 to 14
		Density	WI/ OFBL/ QCL/ 01 Issue No. 01 Issue Date : 16.09.2011	1.0 g/cm ³ to 1.2 g/cm ³
B.	Lead Nitrate Solution	Concentration	JSS 6810 - 80, Appendix - A	50 g/L to 400 g/L
		pH	WI/ OFBL/ QCL/ 03 Issue No. 01 Issue Date : 04.03.2016	1 to 14

Laboratory **Quality Control Laboratory, Ordnance Factory Badmal, P.O. Badmal, Distt : Balangir, Odisha**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7187 (in lieu of T-1063)**

Page 3 of 9

Validity **22.04.2018 to 21.04.2020**

Last Amended on **26.04.2018**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Density	WI/ OFBL/ QCL/ 01 Issue No. 01 Issue Date : 16.09.2011	1.0 g/cm ³ to 1.2 g/cm ³
C.	Magnesium Styphnate Solution	Concentration	JSS 6810 - 49, Appendix - B	50 g/L to 90 g/L
		pH	WI/ OFBL/ QCL/ 03 Issue No. 01 Issue Date : 04.03.2016	1 to 14
		Density	WI/ OFBL/ QCL/ 01 Issue No. 01 Issue Date : 16.09.2011	1.0 g/cm ³ to 1.2 g/cm ³
D.	Amino Guanidine Sulphate Solution	Concentration	IND/ ME/ 986 (Prov.) Sl. No. 5, 6 & 7	100 g/L to 200 g/L
		pH	WI/ OFBL/ QCL/ 03 Issue No. 01 Issue Date : 04.03.2016	1 to 14
		Density	WI/ OFBL/ QCL/ 01 Issue No. 01 Issue Date : 16.09.2011	1.0 g/cm ³ to 1.2 g/cm ³
E.	Sodium Nitrite Solution	Concentration	JSS 15902 - 1971 Appendix - B	150 g/L to 250 g/L
		pH	WI/ OFBL/ QCL/ 03 Issue No. 01 Issue Date : 04.03.2016	1 to 14
		Density	WI/ OFBL/ QCL/ 01 Issue No. 01 Issue Date : 16.09.2011	1.0 g/cm ³ to 1.2 g/cm ³
F.	Lead Ferro Cyanide	Volatile Matter	IND/ ME/ 769, Appendix - A	0.01 % to 5.0 %
		Lead Content	IND/ ME/ 769, Appendix - C	1.0 % to 70.0 %
		Iron Content	IND/ ME/ 769, Appendix - D	0.1 % to 12.0 %

Laboratory **Quality Control Laboratory, Ordnance Factory Badmal, P.O. Badmal, Distt : Balangir, Odisha**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7187 (in lieu of T-1063)**

Page 4 of 9

Validity **22.04.2018 to 21.04.2020**

Last Amended on **26.04.2018**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
G.	Barium Nitrate, Gr.-1	Moisture Content	JSG 0112, Method 1(a)	0.01 % to 5.0 %
		Barium Nitrate Content	JSS 6810 - 59, Appendix - C	1.0 % to 99.5 %
		pH of aqueous extract	JSG 0112 ,Method 5(b)	1 to 14
		Water Soluble Chlorides	JSG 0112 ,Method 7(b)	0.01 % to 2.5 %
		Passing through 125 Micron IS Sieve	JSG 0112 , Method 18	1 % to 100 %
H.	Barium Chromate	Volatile Matter	JSG 0112 , Method 1(b)	0.01 % to 5.0 %
		Water soluble matter	JSG 0112, Method 3	0.01 % to 5.0 %
		Water soluble Chlorides	JSG 0112, Method 7(b)	0.01 % to 2.5%
		Barium Chromate content	IND/ ME/ 794 (a) Appendix - A	1.0 % to 99.0%
		Passing through 53 Micron IS Sieve	IND/ ME/ 794 (a) Appendix - D	1 % to 100%
I.	Barium Peroxide , Gr.1	Barium Compound	JSS 6810 - 96, Appendix - B	1.0 % to 85. %
		Barium Peroxide	JSS 6810 - 96, Appendix - C	1.0 % to 95.0 %
		Passing through 125 Micron IS Sieve	JSG 0112 ,Method - 18	1 % to 100%
		Passing through 63 Micron IS sieve	JSG 0112, Method - 18	1 % to 100%
J.	Graphite Sulphur Free	Volatile Matter	JSG 0112 , Method 1(a)	0.01 % to 5. %
		pH of aqueous extract	JSG 0112, Method 5(b)	1 to 14
		Passing through 90 Micron IS sieve	JSS 9620 - 01, Appendix - F	1 % to 100 %
K.	Gun Powder (G-7, G-12, G-20 & G-40)	Moisture Content	JSS 1376 - 05, Appendix - B	0.01 % to 5.0 %
		Hygroscopicity	JSS 1376 - 05, Appendix - K	0.01 % to 5.0 %
		Passing through 63 Micron to 6.3 mm	JSS 1376 - 05, Appendix - M	1 % to 100 %

Laboratory **Quality Control Laboratory, Ordnance Factory Badmal, P.O. Badmal, Distt : Balangir, Odisha**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7187 (in lieu of T-1063)**

Page 5 of 9

Validity **22.04.2018 to 21.04.2020**

Last Amended on **26.04.2018**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Visual Examination	JSS 1376 - 05, Appendix 'A'	Qualitative
		Chloride as KCl	JSS 1376 - 05, Appendix 'C'	0.001 % to 3.0 % by mass
		Sulphate as K ₂ SO ₄	JSS 1376 - 05, Appendix 'D'	0.01 % to 3.0 % by mass
		Total Chlorine calculated as KClO ₄	JSS 1376 - 05, Appendix 'E'	0.01 % to 5.0 % by mass
		Sodium compound, calculated as Sodium	JSS 1376 - 05, Appendix 'F'	0.001 % to 2.0 %
		Acidity as H ₂ SO ₄	JSS 1376 - 05, Appendix 'G'	0.001 % to 2.0 , % by mass
		Mass of residue on flashing	JSS 1376 - 05, Appendix 'H'	0.1 % to 8.0 %
		Lead Fuze burning test, (Rate)	JSS 1376 - 05, Appendix 'J'	1 to 100 s/ m
		Absolute Density	JSS 1376 - 05, Appendix 'L'	0.5 g/mL to 5.0 g/mL
		Composition (a) Potassium Nitrate (b) Charcoal, (c) Sulphur	JSS 1376 - 05, Appendix 'P'	1.0 % to 90.0 % by mass 1.0 % to 50.0 % by mass 1.0 % to 30.0 % by mass
L.	Lead Acetate Powder	pH of aqueous extract	JSS 6810 - 123, Appendix - E	1 to 14
M.	Lead Nitrate	Volatile Matter	JSG 0112 , Method - 1(b)	0.01 % to 5.0 %
		Lead Nitrate Content	JSS 6810 - 80, Appendix - A	1.0 % to 99.5 %
		pH of aqueous extract	JSG 0112, Method - 5(b)	1 to 14
N.	Paraffin Wax Special	pH of aqueous extract	JSS 9160 - 06, Appendix - E	1 to 14
		Ash on incineration	JSG 0112 , Method 2(a)	0.001 % to 2.0 %
O.	Potassium Chlorate	Moisture Content	IS 708 , Appendix - A-4	0.001 % to 5.0 %
		pH of aqueous extract	IS 708 ,Appendix - A-3	1 to 14

Laboratory **Quality Control Laboratory, Ordnance Factory Badmal, P.O. Badmal, Distt : Balangir, Odisha**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7187 (in lieu of T-1063)**

Page 6 of 9

Validity **22.04.2018 to 21.04.2020**

Last Amended on **26.04.2018**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
P.	Potassium Perchlorate	Moisture Content	JSG 0112 ,Method - 1(a)	0.01 % to 5.0 %
		pH of aqueous extract	JSG 0112 ,Method - 5(a)	1 to 14
		Passing through 150, 75 Micron	JSG 0112 ,Method - 18	1 % to 100 %
Q.	Sodium Nitrate	Volatile Matter	JSG 0112,Method - 1(a)	0.01 % to 5.0 %
		pH of aqueous Solution	JSG 0112,Method - 5(b)	1 to 14
		Water Soluble Chlorides	JSG 0112 ,Method 7(b)	0.01 % to 2.5 %
		Water Soluble Sulphates	JSG 0112 ,Method 8	0.01 % to 2.5 %
R.	Strontium Nitrate	Moisture Content	IS 5671 ,Appendix - A-3	0.01 % to 5.0 %
		pH of aqueous extract	IS 5671 ,Appendix - A-6	1 to 14
4.	Lac & Lac Product			
A.	APC (SHELLAC BASED) APC - 201, 202, 211, 212, 218, 222, 223, 224, 225 & 226.	Total Non-volatile Matter	JSS 8010 - 63, Appendix - A	1 % to 80 %
		Ash	JSS 8010 - 63, Appendix - B	0.01 % to 5.0 %
		Iodine Value	JSS 8010 - 63, Appendix - C	0.1 to 70.0
B.	APC-217	pH of Water Extract	JSS 8010 - 42, Appendix - C	1 to 13
		Kinematic Viscosity at 27° C.	JSS 8010 - 42, Appendix - D	50 cSt to 300 cSt
		Drying Time (a) Surface Dry Minutes (b) Hard Dry Minutes	IS 101 (Part 3, Sec 1) ,	1.0 to 50.0 1.0 to 100.0
		Finish	IS 101 (Part 3, Sec 4)	Qualitative
		Scratch Test	IS 101 (Part 5, Sec 1)	Qualitative
C.	APC-210	Drying Time at room temperature on brass plate (a) Surface Dry hours (b) Hard Dry hours	IS 101 (Part 3, Sec 1)	0 to 10.0 hr 0 to 20.0 hr

Laboratory **Quality Control Laboratory, Ordnance Factory Badmal, P.O. Badmal, Distt : Balangir, Odisha**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7187 (in lieu of T-1063)**

Page 7 of 9

Validity **22.04.2018 to 21.04.2020**

Last Amended on **26.04.2018**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Viscosity at 27±2° C.	IS - 1448, Part - 25 U-Tube Viscometer	50 cSt to 300 cSt
		Hardness (Scratch Test)	IS 101 (Part 5, Sec 1)	Qualitative
		Adhesion (Pressure Test)	IS 101 (Part 5, Sec 1)	Qualitative
		Water Absorption i.e. Gain in mass	JSS: 8010-64, Appendix - C	0 to 20 g
D.	APC-219	Drying Time Hard Dry Minutes	IS 101 (Part 3, Sec 1)	0 to 20 min
		Finish	IS 101 (Part 3, Sec 4)	Qualitative
		Viscosity at 25° C.	IS - 1448 ,Part-25	50 cSt to 300 cSt
		Total Solids	JSS 8010-48 Appendix - A	5 % to 70 %
		Flexibility	IS 101 (Part 5, Sec 2)	Qualitative
		Scratch Hardness	IS 101 (Part 5, Sec 1)	Qualitative
		pH	JSS 8010-48, Appendix - E	1 to 13
E.	APC-103	Drying Time (a) Surface Dry Minutes (b) Hard Dry Minutes	IS 101 (Part 3, Sec 1)	0 to 50 min 0 to 100 min
		Kinematic Viscosity of the thinned material at 25±1°C.	IS - 1448,Part-25	50 cSt to 300 cSt
		Scratch Test (Hardness)	IS 101 (Part 5, Sec 1)	Qualitative
		Bend Test (Flexibility & Adhesion)	IS 101 (Part 5, Sec 2)	Qualitative
		Resistance to Warm Water	IND/ME/368(c), Appendix - A	Qualitative

Laboratory

Quality Control Laboratory, Ordnance Factory Badmal, P.O. Badmal,
Distt : Balangir, Odisha

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7187 (in lieu of T-1063)

Page 8 of 9

Validity 22.04.2018 to 21.04.2020

Last Amended on 26.04.2018

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
II.	PAINTS AND SURFACE COATING			
1.	PAINT i. Olive Green, ii. Golden Yellow, iii. Middle Buff, iv. Red Oxide (Orthoxylene Based)	Viscosity	IS 138 IS 168 IND/ME/964 IS 101 (Part 1, Sec 5)	30 s to 300 s
		Flash Point	IS 138 IS 168 IND/ME/964 IS 101 (Part 1, Sec 6)	24 °C to 55 °C
		Mass	IS 138 IS 168 IND/ME/964 IS 101 (Part 1, Sec 7)	07 to 19 Kg / 10 L
		Water Content	IS 138 IS 168 IND/ME/964 IS 101 (Part 2, Sec 1)	0 % to 5 .0 %
		Pressure Test	IS 138 IS 168 IS 101 (Part 5, Sec 1)	Qualitative
		Bend Test	IS 138 IS 168 IS 101 (Part 5, Sec 2)	Qualitative
		Resistance to water	IS 138 IS 101 (Part 7, Sec 1)	Qualitative
		Resistance to Lubricating Oil	IS 138 IS 168 IS 101 (Part 7, Sec 2)	Qualitative
		Resistance to Petroleum Hydrocarbon	IS 138 IS 168 IS 101 (Part 7, Sec 2)	Qualitative
		Lead Restriction	IS 138 IS 168 IS 101 (Part 8, Sec 5)	0.1 % to 5.0 %

Pankaj Johri
Convenor

Avijit Das
Program Director

Laboratory **Quality Control Laboratory, Ordnance Factory Badmal, P.O. Badmal,
Distt : Balangir, Odisha**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7187 (in lieu of T-1063)**

Page 9 of 9

Validity **22.04.2018 to 21.04.2020**

Last Amended on **26.04.2018**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Volume Solid	IS 168 IS 101 (Part 8, Sec 6)	30 % to 65 %
		Calcium Compound	IS 138 IS 63	0.2 % to 14 %
		Zinc Chrome Content	IND/ME/964	3 % to 40 %
2.	Industrial/ allied chemicals			
A.	i. ABS Cement	Volatile Matter	JSG 0112, Method 1(a)	0.1 % to 5.0 %
	ii. Sulphur Gr.1	Ash Content	JSG 0112, Method 2(a)	0.01 % to 16 %
	iii. Kaoline	pH	JSG 0112, Method 5(b)	1 to 13
	iv. Rosin Gr.1	Water Soluble Chlorides	JSG 0112, Method 7(b)	0.01 % to 2.5 %
	v. Sodium Aluminum Fluoride (Cryolite)	Water Soluble Sulphates	JSG 0112, Method 8	0.01 % to 2.5 %
	vi. Carbon Black			
	vii. Silicon grease			
	viii. Antimony Sulphide			