

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	1 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I. METALS AND ALLOYS				
1.	Plain Carbon & Low Alloy Steels	Carbon	IS 228 (Part 1): 1987 (RA 2008)	0.02 % to 2.5 %
	Stainless Steels		IS 228 (Part 1): 1987 (RA 2008)	0.02 % to 2.5 %
	HSS, Tool Steels		IS 228 (Part 1): 1987 (RA 2008)	0.02 % to 2.5 %
	HCHCR steels		IS 228 (Part 1): 1987 (RA 2008)	0.02 % to 2.5 %
	Cast Iron		SOP / WI / S / 02 – 2012	1.5 % to 5.0 %
2.	Plain Carbon & Low Alloy Steels	Manganese	IS 228 (Part 2): 1987 (RA 2008) ASTM E350- 2012	0.005 % to 2.5 %
	Stainless Steels		ASTM E-353-03 (2006)	0.1 % to 18.0 %
	H.S.S. / Tool Steels		ASTM E-352 - 2013	0.1 % to 2.5 %
	HCHCR Steels		ASTM E-352 - 2013	0.1 % to 2.5 %
	Cast Iron & S.G. Iron		IS 12308 (Part 10): 1991 (RA 2006)	0.1 % to 1.0 %
3.	Plain Carbon & Low Alloy Steels	Silicon	IS 228 (Part 8): 1989 (RA 2009)	0.05 % to 4.0 %
	Stainless Steels		ASTM E-353-93 (2006)	0.05 % to 4.0 %
	H.S.S. / Tool Steels		ASTM E-352-2013	0.05 % to 4.0 %
	HCHCR Steels		ASTM E-352-2013	0.05 % to 4.0 %
	Cast Iron & S.G. Iron		IS 12308 (Part 6): 1991 (RA 2006)	1.0 % to 4.0 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	2 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
4.	Plain Carbon & Low Alloy Steels	Sulphur	IS 228 (Part 9): 1989 (RA 2009)	0.01 % to 0.25 %
	Stainless Steels		IS 228 (Part 9): 1989 (RA 2009)	0.01 % to 0.25 %
	H.S.S. / Tool Steels		IS 228 (Part 9): 1989 (RA 2009)	0.01 % to 0.1 %
	HCHCR Steels		ASTM E-352 – 2013	0.01 % to 0.25 %
	Cast Iron		SOP / WI / S / 02 – 2012	0.005 % to 0.3 %
5.	Plain Carbon & Low Alloy Steels	Phosphorus	IS 228 (Part 3): 1987 (RA 2008)	0.005 % to 0.25 %
	Stainless Steels		ASTM E – 353 – 93 (2006)	0.01 % to 0.25 %
	H.S.S. / Tool Steels		ASTM E – 353 – 93 (2006)	0.01 % to 0.25 %
	HCHCR Steels		ASTM E-352 – 2013	0.01 % to 0.25 %
	Cast Iron & S.G. Iron		IS 12308 (Part 5): 1991 (RA 2006)	0.01 % to 0.25 %
6.	Plain Carbon & Low Alloy Steels	Chromium	IS 228 (Part 6): 1987 (RA 2009) AAS ASTM E350 – 2012	0.006 % to 5.0 %
	Stainless Steels		ASTM E - 353 - 93 (2006)	1.0 % to 25.0 %
	H.S.S. / Tool Steels		ASTM E - 352 – 2013	0.006 % to 20.0 %
	HCHCR Steels		ASTM E - 352 – 2013	0.006 % to 20.0 %
	Cast Iron & S.G. Iron		IS 12308 (Part 8): 1989 (RA 2009) ASTM E:351 – 2013	0.006 % to 1 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	3 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
7.	Plain Carbon & Low Alloy Steels	Nickel	IS 228 (Part 5) : 1987 (RA 2009) ASTM E 350 – 2012	0.005 % to 4.0 %
	Stainless Steels		ASTM E – 353 – 93 (2006)	0.05 % to 20.0 %
	H.S.S. / Tool Steels		ASTM-E-351 - 2013/AAS	0.005 % to 1.00 %
	Cast Iron & S.G. Iron		IS 12308 (Part 7): 1991 (RA 2006) AAS/ ASTM E 351 – 2013	0.005 % to 4.0 %
8.	Plain Carbon & Low Alloy Steels	Molybdenum	IS 228 (Part 7): 1990 (RA 2012)	0.01 % to 2.5 %
	Stainless Steels		IS 228 (Part 7): 1990 (RA 2012)	0.02 to 3.0
	H.S.S. / Tool Steels		ASTM E- 352 – 2013	0.02 % to 10.0 %
	HCHCR Steels		ASTM E-352 – 2013	0.01 % to 2.0 %
	Cast Iron & S.G. Iron		IS 12308 (Part 9): 1993 (RA 2009)	0.10 % to 1.0 %
9.	Plain Carbon & Low Alloy Steels	Vanadium	ASTM E- 350-2012	0.01 % to 1.5 %
	Stainless Steels		ASTM-E-353 – 93 (2006)	0.01 % to 1.00 %
	H.S.S. / Tool Steels		ASTM E- 352 – 2013	0.01 % to 4.0 %
10.	Plain Carbon & Low Alloy Steels	Copper	IS 228 (Part 15): 1992 (RA 2009)	0.001 % to 2.0 %
	Stainless Steels		AAS/ ASTM E-353 – 93 (2006)	0.001 % to 5.0 %
	Cast Iron & S.G. Iron		IS 12308 (Part 12): 1992 (RA 2007)	0.001 % to 2.0 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	4 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
11.	Plain Carbon & Low Alloy Steels	Aluminium	AAS ASTM E-350 – 2012	0.005 % to 1.5 %
	Stainless Steels		ASTM-E-353-93 (2006)	0.005 % to 1.5 %
12.	Stainless Steels	Titanium	AAS ASTM E-353 – 93 (2006)	0.05 % to 2.0 %
	Cast Iron & S.G Iron		IS 12308 (Part 14): 1993 (RA 2009)	0.05 % to 0.50 %
13.	H.S.S. / Tool Steels	Tungsten	ASTM E- 352 – 2013	0.1 % to 24.0 %
14.	Cast Iron & S.G Iron	Magnesium	IS 12308 (Part 13): 1992 (RA 2007) ASTM E 351	0.002 % to 0.20 %
15.	Low alloy steel	Lead	ASTM-E-350 - 2012	0.002 % to 0.50 %
	Cast Iron		ASTM-E-351 - 2013	0.002 % to 0.50 %
	Stainless steel		ASTM-E-353 – 93 (2006)	0.002 % to 0.50 %
16.	Low alloy steel	Tin	ASTM-E-350 - 2012	0.050 % to 1.00 %
	Cast Iron		ASTM-E-351 - 2013	0.050 % to 1.00 %
	Stainless steel		ASTM-E-353 – 93 (2006)	0.05 % to 1.00 %
	Tool Steel/HSS		ASTM-E-351 - 2013	0.05 % to 1.00 %
17.	Low alloy steel	Cobalt	ASTM-E-353 – 93 (2006)	0.005 % to 0.20 %
	Stainless steel		ASTM-E-353 – 93 (2006)	0.005 % to 0.50 %
	Cast Iron		ASTM-E-351 - 2013	0.005 % to 5.0 %
	Tool Steel/HSS		ASTM-E-352 - 2013	0.01 % to 15.0 %
18.	Low alloy steel	Bismuth	ASTM-E-350 – 2012	0.02 % to 0.25 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	5 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
19.	Ferro Chromium	Chromium	IS 13452 (Part 5): 2003 (RA 2009)	50 % to 75 %
		Silicon	IS 13452 (Part 1): 1988 (RA 2009) IS 13452 (Part 2): 1992 (RA 2007)	0.2 % to 4.0 %
		Carbon	IS 228 (Part 1): 1987 (RA 2008)	0.02 % to 8.0 %
		Phosphorus	IS 13452 (Part 7): 2003 (RA 2009)	0.01 % to 0.10 %
20.	Ferro Manganese	Manganese	IS 1559: 2007	50 % to 85 %
		Carbon	IS 228 (Part 1): 2008 (RA 2001)	0.02 % to 8.0 %
21.	Metallic Manganese	Manganese	IS 2017: 2007	85 % to 99 %
22.	Ferro Molybdenum	Molybdenum	IS 12614 (Part 1): 2009	50 % to 70 %
23.	Ferro Silicon	Silicon	IS 1559 (Part 1): 1988 (RA 2009)	50 % to 80 %
24.	Ferro Titanium	Titanium	IS 13840 (Part 3): 1993 (RA 2009)	25 % to 70 %
25.	Metallic Silicon	Silicon	IS 2277: 1964 (RA 2007)	90.0 % to 99 %
26.	Calcium Salicide	Silicon	IS 2018: 1998 (RA 2007)	50 % to 70 %
		Calcium	IS 2018: 1988 (RA 2007)	25 % to 35 %
27.	Ferro Vanadium	Vanadium	ASTM E-365-1999	40 % to 80 %
28.	Foundry Nickel	Iron as Fe	IS 2390: 1967 (RA 2010)	10 % to 30 %
		Nickel	IS 2390: 1967 (RA 2010)	70 % to 99.8 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	6 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
29.	Sponge Iron	Fe- Metallic	IS 10812: 1992 (RA 1997)	70 % to 99.5 %
		Total Iron	IS 1493 : 1981 (RA 2006)	70 % to 99.5 %
30.	Steel	Hydrogen	SOP / WI / S / 02 - 2012 IS 228 (Part 22): 2003 (RA 2008)	0.3 ppm to 10 ppm
		Oxygen	SOP / WI / S / 02 IS 228 (Part 18): 1998 (RA 2006)	5 ppm to 500 ppm
		Nitrogen	SOP / WI / S / 02 - 2012 IS 228 (Part 17): 1998 (RA 2010)	5 ppm to 6000 ppm
31.	Steel / Ferro-alloys / Cast Iron	Carbon	SOP / WI / S / 02 - 2012 IS 228 (Part 20): 2003 (RA 2008)	0.005 % to 8.0 %
		Sulphur	SOP / WI / S / 02 - 2012 IS 228 (Part 20): 2003 (RA 2008)	0.005 % to 0.40 %
32.	Ferrous Metal & Alloys (Spectro Analysis) Emission Spectro (Min.Sample Size 16 mm Diameter Flat Surface)	Aluminium	ASTM E-1507 - 98 (2003) ASTM E-415 - 14 ASTM E-1086 – 14 SWDC/WI/S/03 – 2012	0.002 % to 1.0 %
		Boron		0.0001 % to 0.01 %
		Carbon		0.005 % to 2.6%
		Cobalt		0.001 % to 10 %
		Chromium		0.002 % to 27 %
		Copper		0.001 % to 4 %
		Manganese		0.05 % to 20 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	7 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Ferrous Metal & Alloys (Spectro Analysis) Emission Spectro (Min.Sample Size 16 mm Diameter Flat Surface)	Magnesium		0.001 % to 0.08 %
		Molybdenum		0.001 % to 10 %
		Nickel		0.001 % to 40 %
		Niobium		0.001 % to 2.5 %
		Phosphorus		0.003 % to 1.2 %
		Lead		0.001 % to 0.35 %
		Sulphur		0.001 % to 0.15 %
		Tin		0.001 % to 0.20 %
		Silicon		0.005 % to 4 %
		Titanium		0.001 % to 1 %
		Vanadium		0.001 % to 2 %
		Tungsten		0.001 % to 25 %
		Zirconium		0.001 % to 0.1 %
		Tantalum		0.001 % to 0.2 %
		Cerium		0.001 % to 0.06 %
		Antimony		0.001 % to 0.10 %
	Nitrogen		0.010 % to 0.60 %	
	Calcium		0.001 % to 0.006 %	
	Arsenic		0.001 % to 0.10 %	

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	8 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
33.	Zinc & Zinc Alloys (Spectro Analysis Emission Spectro (Min .Sample Size 16 mm Dia Flat Surface))	Aluminium	ASTM E-634 - 12 ASTM E-1507 – 98 (2003) ASTM-E-1086 – 14	0.10 % to 4.5 %
		Copper		0.001 % to 1.40 %
		Cadmium		0.0001 % to 0.006 %
		Iron		0.001 % to 0.10 %
		Magnesium		0.01 % to 0.10 %
		Nickel		0.0002 % to 0.03 %
		Lead		0.0005 % to 0.01 %
		Tin		0.0003 % to 0.005 %
34.	Aluminium & Aluminium Alloys Spectro Analysis (Emission Spectro) (Min .Sample Size 16 mm Dia Flat Surface)	Chromium	ASTM E-1507 – 98 (2003) ASTM E-1251-2011	0.001 % to 0.5 %
		Copper		0.002 % to 13 %
		Iron		0.001 % to 1.5 %
		Manganese		0.01 % to 1.5 %
		Magnesium		0.001 % to 5 %
		Nickel		0.001 % to 3 %
		Lead		0.001 % to 0.5 %

Laboratory Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana

Accreditation Standard ISO/IEC 17025: 2005

Discipline Chemical Testing **Issue Date** 15.01.2015

Certificate Number T-0271 **Valid Until** 14.01.2017

Last Amended on 31.03.2015 **Page** 9 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Aluminium & Aluminium Alloys Spectro Analysis (Emission Spectro) (Min .Sample Size 16 mm Dia Flat Surface)	Tin		0.001 % to 0.30 %
		Silicon		0.001 % to 16 %
		Zinc		0.001 % to 11 %
		Titanium		0.001 % to 0.35 %
35.	Copper & Copper Alloys (Spectro Analysis) Emission Spectro Min. Sample Size 16 mm Diameter Flat Surface)	Aluminium	BS EN – 15079: 2007	0.001 % to 11.5 %
		Arsenic		0.001 % to 0.40 %
		Bismuth		0.001 % to 0.04 %
		Iron		0.001 % to 6 %
		Manganese		0.001 % to 3.5 %
		Nickel		0.001 % to 7 %
		Phosphorus		0.003 % to 1 %
		Lead		0.002 % to 13 %
		Sulphur		0.003 % to 0.20 %
		Tin		0.001 % to 13 %
		Antimony		0.001 % to 0.50 %
		Silicon		0.001 % to 1 %
		Zinc		0.001 % to 50 %
		Chromium		0.01 % to 0.05 %
	Copper		50 % to 99.99 %	

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	10 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
36.	Tin & Lead Base Alloys	Tin	IS 1409: 1959 (RA 2010) SWDC/SOP/NF/CHEM/02 – 2010	0.005 % to 99.99 %
		Lead	IS 1409: 1959 (RA 2010) SWDC/SOP/NF/CHEM/02 – 2010	0.005 % to 99.99 %
		Antimony	IS 403: 1964 (RA 2010)	0.001 % to 20 %
		Bismuth	IS 1409: 1959 (RA 2010) SWDC/SOP/NF/CHEM/02 – 2010	0.001 % to 25.0 %
		Cadmium	IS 1409: 1959 (RA 2010)	0.0001 % to 25.0 %
		Copper	IS 1409: 1959 (RA 2010)	0.001 % to 8.0 %
		Iron	IS 1409: 1959 (RA 2010)	0.001 % to 0.5 %
		Zinc	IS 1409: 1959 (RA 2010)	0.001 % to 1.0 %
		Aluminium	IS 1409: 1959 (RA 2010)	0.001 % to 0.5 %
		Nickel	IS 1409: 1959 (RA 2010)	0.001 % to 0.5 %
		Cobalt	IS 1409: 1959 (RA 2010)	0.001 % to 0.10 %
37.	Copper & Copper Alloys	Manganese	IS 1409: 1959 (RA 2010)	0.001 % to 0.10 %
		Silver	IS 1409: 1959 (RA 2010)	0.001 % to 5.0 %
		Aluminium	IS 4027 (Part 9): 1991 (RA 2007)	0.001 % to 12 %
		Copper	IS 4027(Part 1): 1987 (RA 2006) IS 3685: 1966 (RA 2006) IS 440: 1964 (RA 2006)	10 % to 99.99 %
		Chromium	ASTM E-118 – 89 (2004)	0.001 % to 2.0 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	11 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Copper & Copper Alloys	Iron	IS 4027 (Part 8): 1991 (RA 2007) IS 440: 1964 (RA 2006)	0.001 % to 6.0 %
		Lead	IS 4027 (Part 1): 1987 (RA 2006)	0.001 % to 25.0 %
		Manganese	ASTM E-54 – 80 (1996)	0.001 % to 5.0 %
		Nickel	ASTM E-54-80 (1996) IS 440: 1964 (RA 2006)	0.001 % to 35.0 %
		Phosphorus	IS 4027 (Part 3): 1987 (RA 2006)	0.01 % to 8.0 %
		Silicon	IS 3685: 1966 (RA 2006)	0.1 % to 5.0 %
		Tin	IS 4027 (Part 5): 1987 (RA 2006) SWDC/SOP/NF/CHEM/01 – 2010	0.01 % to 15.0 %
		Zinc	IS 3685: 1966 (RA 2006)	0.0001 % to 50.0 %
		Silver	ASTM-E-56	0.001 % to 60 %
		Cadmium	ASTM-E-56	0.0001 % to 25.0 %
		Graphite Carbon	IS 12548: 1988 (RA 2009)	0.1 % to 50 %
		Antimony	IS 4027 (Part 7): 1990 (RA 2007)	0.001 % to 2 %
		Bismuth	IS 4027 (Part 7): 1990 (RA 2007)	0.001 % to 2 %
		Molybdenum	IS 4027 (Part 7): 1990 (RA 2007)	0.1 % to 8.0 %
38.		Aluminium & Aluminium Alloys	Chromium	ASTM E-34 –11 e1
	Copper		ASTM E-34 –11 e1	0.001 to 12.0 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	12 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Aluminium & Aluminium Alloys	Iron	ASTM E-34 –11 e1	0.001 % to 5.0 %
		Lead	ASTM E-34 –11 e1	0.001 % to 1.0 %
		Manganese	ASTM E-34 –11 e1	0.001 % to 5.0 %
		Nickel	ASTM E-34 –11 e1	0.001 % to 4.0 %
		Silicon	ASTM E-34 –11 e1	0.05 % to 16.0 %
		Tin	ASTM E-34 –11 e1	0.01 % to 1.0 %
		Zinc	ASTM E-34 –11 e1	0.0001 % to 10.0 %
		Titanium	ASTM E-34 –11 e1	0.01 % to 1.0 %
		Magnesium	ASTM E-34 –11 e1	0.0001% to 5.0 %
39.	Zinc & Zinc Alloys	Aluminium	ASTM-E-47 – 93	0.001 % to 12.0 %
		Copper	IS 2600 (Part 2): 1988 (RA 2008)	0.0001 % to 2.0 %
		Iron	IS 2600 (Part 2): 1988 (RA 2008)	0.001 % to 2.0 %
		Lead	IS 2600 (Part 2): 1988 (RA 2008)	0.001 % to 2.0 %
		Cadmium	IS 2600 (Part 2): 1988 (RA 2008)	0.0001 % to 0.5 %
		Nickel	IS 2600 (Part 1): 1988 (RA 2008)	0.001 % to 1.0 %
		Magnesium	AAS/ ASTM –E-536-08	0.0001 % to 0.5 %
	Zinc	SWDC/SOP/NF/CHEM/03 -2010 IS 9958: 1981 (RA 2012)	50 % to 99.99 %	

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	13 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
II. ORES AND MINERALS				
1.	Iron Ore	Total Iron	IS 1493 (Part 1): 1981 (RA 2006)	40 % to 70 %
		Phosphorus	IS 1493 (Part 1): 1981 (RA 2006)	0.01 % to 0.5 %
		Silica	IS 1493 (Part 1): 1981 (RA 2006)	0.1 % to 10 %
III. METALLIC COATINGS AND TREATMENT SOLUTIONS				
1.	Electroplated material	Coating Thickness of Cd, Cr, Ni, Cu, Au, Pb, Ag, Sn, Zn	SWDC/SOP/NF/PT/01 - 2010 ASTM B 504-90 (2011) IS 14126: 1994 (RA 2010) ISO 2177: 1985 (RA 2003)	0.01 μ to 99.9 μ
		Mass of Zn and Al coating	IS 6745: 1972 (RA 2010) IS 3821: 1973 (RA 2010)	0.1 gm/m ² to 2000 gm/m ²
2.	Coating Thickness	Anodizing Coating	IS 5523: 1983 (RA 2010) ASTM B-137 95 (2009)	0.5 μ to 50 μ
IV. CORROSION TEST				
1.	Metals	Accelerated corrosion (CASS /AASS Test)	IS 5528: 1983 (RA 2010) ASTM-B-368 – 09 (2014) ASTM B-287 – 74 IS 6910: 1985 (RA 2010) ISO-9227	Qualitative
		Corrosion test (Salt Spray Test)	IS 9844-1981 (RA 2010) ASTM-B117-11 ISO-9227 : 2012	Qualitative
V. BUILDING MATERIALS				
1.	Refractory Material, Fire Bricks, Fire Clay	Loss on Ignition	IS 1527: 1972 (RA 2006)	0.1 % to 5.0 %
		Oxide of Silica	IS 1527: 1972 (RA 2006)	10 % to 70 %
		Alumina	IS 1527: 1972 (RA 2006)	20.0 % to 80.0 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	14 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Refractory Material, Fire Bricks, Fire Clay	Iron Oxide	IS 1527: 1972 (RA 2006)	0.5 % to 8.0 %
		Calcium Oxide	IS 1527: 1972 (RA 2006)	0.1 % to 5.0 %
		Magnesium Oxide	IS 1527: 1972 (RA 2006)	0.1 % to 5.0 %
		Titanium Oxide	IS 1527: 1972 (RA 2006)	0.1 % to 3.0 %
2.	Fly Ash	Iron Oxide As Fe ₂ O ₃	IS 1727: 1967 (RA 2008)	0.1 % to 10.0 %
		Alumina As Al ₂ O ₃	IS 1727: 1967 (RA 2008)	15.0 % to 40.0 %
		Calcium Oxide as CaO	IS 1727: 1967 (RA 2008)	0.1 % to 5.0 %
		Magnesia As MgO	IS 1727: 1967 (RA 2008)	0.1 % to 5.0 %
		Oxide of Silica	IS 1727: 1967 (RA 2008)	30.0 % to 70.0%
		Sulphate As SO ₃	IS 1727: 1967 (RA 2008)	0.05 % to 5.0 %
		Loss on Ignition	IS 1727: 1967 (RA 2008)	0.1 % to 10.0%
		Total Alkali as Na ₂ O	IS 1727: 1967 (RA 2008)	0.1 % to 5.0 %
3.	Cement OPC PPC PSC	Loss on ignition	IS 4032: 1985 (RA 2009)	0.1 % to 12 %
		Insoluble residue	IS 4032: 1985 (RA 2009)	0.1 % to 35 %
		Water soluble alkalies	IS 4032: 1985 (RA 2009)	0.1 % to 1.5 %
		Alumina	IS 4032: 1985 (RA 2009)	3.0 % to 8.0 %
		Iron Oxide	IS 4032: 1985 (RA 2009)	2.0 5 to 5.0 %
		Silica	IS 4032: 1985 (RA 2009)	15 % to 25 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	15 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Cement OPC PPC PSC	Calcium Oxide	IS 4032: 1985 (RA 2009)	50 % to 70 %
		Magnesium Oxide	IS 4032: 1985 (RA 2009)	0.5 % to 8.0 %
		Sulphuric anhydride as SO ₃	IS 4032: 1985 (RA 2009)	0.5 % to 5.0 %
		Sulphide Sulphur	IS 4032: 1985 (RA 2009)	0.01 % to 1.5 %
		Chloride	IS 4032: 1985 (RA 2009)	0.01 % to 0.50 %
4.	Admixture	Chloride	IS 6925: 1973 (RA 2008)	0.01 % to 1.0 %
		pH Value	IS 9103: 1999 (RA 2008)	2 to 12
		Ash content	IS 9103: 1999 (RA 2008)	5.0 % to 25 %
		Dry material content	IS 9103: 1999 (RA 2008)	0.01 % to 60.0 %
		Relative Density	IS 9103: 1999 (RA 2008)	1.00 to 1.50
5.	Soil	Organic Matter	IS 2720 (Part 22): 1972 (RA 2010)	0.1 % to 10 %
		pH Value	IS 2720 (Part 26): 1987 (RA 2011)	2 to 12
		Total soluble sulphate	IS 2720 (Part 27): 1977 (RA 2010)	0.01 % to 2.0 %
6.	Aggregate	Alkali Aggregate Reactivity		
		Dissolved Silica	IS 2386 (Part 7): 1963 (RA 2011)	1 millimoles/l to 80 millimoles/l
		Reduction In Alkalinity	IS 2386 (Part 7): 1963 (RA 2011)	5 millimoles/l to 700 millimoles/l
		Sulphate	DIN-EN-1774 (Part 1): 1998	0.01 % to 2.0 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	16 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Aggregate	Chloride	DIN-EN-1774 (Part 1): 1998	0.01 % to 2.0 %
7.	Concrete	Total Sulphate	BS 1881 (Part 124): 1988	0.01 % to 2.0 %
		Total Chloride	BS 1881 (Part 124): 1988	0.01 % to 2.0 %
VI. AIR, GASES AND ATMOSPHERE				
1.	Stack Emission	Particulate Matter	IS 11255 (Part 1): 1985 (RA 2009) IS 11255 (Part 4): 2006 SWDC/WI/E/03	5 mg/m ³ to 1000 mg/m ³
		Sulphur Dioxide	IS 11255 (Part 2): 1985 (RA 2009) SWDC/WI/E/03 – 2012	2 mg/m ³ to 100 mg/m ³
		Nitrogen oxide	IS 5182 (Part 6): 2006 (RA 2012) SWDC/WI/E/03 – 2012	2 mg/m ³ to 100 mg/m ³
2.	Ambient Air /Process Emissions	Particulate Matter (PM2.5)	USEPA-FRM/FEM-40-CFR Part-50-53-Appendix-L	5 µg/m ³ to 1000 µg/m ³
		Particulate Matter (PM10)	IS 5182 (Part 23): 2006 (RA 2012) SWDC/WI/E/04 – 2012	5 µg/m ³ to 2000 µg/m ³
		Metals(Lead, Nickel) (Particulate Friction)	IS 5182 (Part 22): 2004 (RA 2009)	1 µg/m ³ to 500 µg/m ³
		Ammonia (gaseous)	IS 11255 (Part 6): 1999	2.0 µg/m ³ to 500 µg/m ³
		Ozone	ASTM – D -5156 – 02 (2008)	5 µg/m ³ to 10000 µg/m ³
		Suspended Particulate Matter (SPM)	IS 5182 (Part 4): 1999 (RA 2010) SWDC/WI/E/04 – 2012	5 µg/m ³ to 10000 µg/m ³
		Sulphur –Di-Oxide as SO ₂	IS 5182 (Part 2): 2001 (RA 2012) SWDC/WI/E/04 - 2012	1 µg/m ³ to 150 µg/m ³

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	17 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Ambient Air /Process Emissions	Nitrogen-Di- oxide as NO ₂	IS 5182 (Part 6): 2006 (RA 2012) SWDC/WI/E/04 - 2012	1 µg/m ³ to 150 µg/m ³
VII. POLLUTION AND ENVIRONMENT				
1.	Waste water / Effluents	Bio Chemical Oxygen Demand	IS 3025 (Part 44): 1993 (RA 2009)	5 mg/L to 10000 mg/L
		Chemical Oxygen Demand	5220B of SM (APHA): 2012 IS 3025 (Part 58): 2006 (RA 2012)	5 mg/L to 10000 mg/L
		Chlorides	IS 3025 (Part 32): 1988 (RA 2009)	2 mg/L to 5000 mg/L
		Cadmium	IS 3025 (Part 41): 1992 (RA 2009)	0.02 mg/L to 1000 mg/L
		Chromium as Cr ⁺³	3111B of SM (APHA) 2012/AAS IS 3025 (Part 52): 2003 (RA 2009)	0.1 mg/L to 1000 mg/L
		Hexavalent Chromium as Cr ⁺⁶	SM (APHA)-2012 colorimetric	0.1 mg/L to 100 mg/L
		Copper	IS 3025 (Part 42): 1992 (RA 2009)	0.06 mg/L to 1000 mg/L
		Iron	3111B of SM(APHA)-2012, / AAS IS 3025 (Part 53): 2003 (RA 2009)	0.10 mg/L to 1000 mg/L
		Lead	IS 3025 (Part 47): 1994 (RA 2009)	0.15 mg/L to 1000 mg/L
		Manganese	3111B of SM(APHA)-2012, AAS	0.1 mg/L to 1000 mg/L
		Nickel	3111B of SM(APHA) 2012, AAS IS 3025 (Part 54): 2003 (RA 2009)	0.10 mg/L to 1000 mg/L
		Zinc	IS 3025 (Part 49): 1994 (RA 2009)	0.01 mg/L to 100 mg/L
		Aluminium	3111D of SM (APHA) 2012AAS IS 3025 (Part 58): 2006 (RA 2012)	1.0 mg/L to 1000 mg/L

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	18 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Waste water / Effluents	Volatile (organic) solids	IS 3025 (Part 18): 1984 (RA 2012)	5 mg/L to 2000 mg/L
		Fixed (Inorganic) solids	IS 3025 (Part 18): 1984 (RA 2012)	5 mg/L to 10000 mg/L
		Ammonia- Nitrogen (Nesslerization & Titrimetric Method)	IS 3025 (Part 34): 1988 (RA 2009)	5 mg/L to 1000 mg/L
		Oils & Grease	IS 3025 (Part 39): 1991 (RA 2009) Partition Gravimetric Method	5.0 mg/L to 250 mg/L
		pH Value	IS 3025 (Part 11): 1983 (RA 2012) Electrometric Method	2 to 12
		Temperature	IS 3025 (Part 9): 1984 (RA 2012)	10 °C to 100 °C
		Phosphates (Dissolved) Stannous Chloride Method	IS 3025 (Part 31): 1988 (RA 2009) Cl. 4.0	0.1 mg/L to 1000 mg/L
		Total Dissolved solid	IS 3025 (Part 16): 1984 (RA 2012)	5 mg/L to 10000 mg/L
		Sulphates Gravimetric/ turbidity Method	IS 3025 (Part 24): 1986 (RA 2009) IS 3025 (Part 24): 1986 (RA 2009)	1.0 mg/L to 3000 mg/L
		Total Suspended Solids	IS 3025 (Part 17): 1984 (RA 2012)	5 mg/L to 10000 mg/L
		Nitrates –Nitrogen Chromo tropic acid method	IS 3025 (Part 34): 1988 (RA 2009)	0.1mg/L to 10000 mg/L
		Colour	IS 3025 (Part 4): 1983 (RA 2012)	Qualitative
VIII. WATER				
1.	Water (Drinking / Construction / Surface/ Borewell)	Acidity	IS 3025 (Part 22): 1986 (RA 2009)	1 mg/L to 1000 mg/L

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	19 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Water (Drinking / Construction / Surface/ Borewell)	Alkalinity	IS 3025 (Part 23): 1986 (RA 2009)	1 mg/L to 1000 mg/L
		Calcium EDTA titrimetric Method	IS 3025 (Part 40): 1991 (RA 2009)	2 mg/L to 1000 mg/L
		Chlorides Argentometric Method	IS 3025 (Part 32): 1988 (RA 2009)	2 mg/L to 3000 mg/L
		Residual free Chlorine Titrimetric Method/ color Comparison Method	IS 3025 (Part 26): 1986 (RA 2009)	1.0 mg/L to 25 mg/L
		Colour Visual Comparison Method	IS 3025 (Part 4): 1983 (RA 2012)	5 to 500
		Fluorides SPADNS Method	SM (APHA)-2012, 4500 F, (4-82)	0.1 mg/L to 10 mg/L
		Taste (for drinking water)	IS 3025 (Part 8): 1984 (RA 2012)	Qualitative
		Odour	IS 3025 (Part 5): 1983 (RA 2012)	Qualitative
		Total Hardness EDTA Titrimetric Method	IS 3025 (Part 21): 2009	2 mg/L to 1000 mg/L
		Magnesium EDTA Titrimetric Method	IS 3025 (Part 46): 1994 (RA 2009)	2 mg/L to 500 mg/L
		Cadmium	IS 3025 (Part 41): 1992 (RA 2009)	0.02 mg/L to 100 mg/L
		Chromium as Cr ⁺³	3111B of SM APHA)-2012/AAS	0.1 mg/L to 1000 mg/L
		Hexavalent Chromium as Cr ⁺⁶	SM (APHA)-2012, colorimetric	0.1 mg/L to 100 mg/L

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	20 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Water (Drinking / Construction / Surface/ Borewell)	Copper	IS 3025 (Part 42): 1992 (RA 2009)	0.06 mg/L to 100 mg/L
		Iron	3111 B of SM (APHA)-2012 AAS IS 3025 (Part 53): 2003 (RA 2009)	0.1 mg/L to 100 mg/L
		Lead	IS 3025 (Part 47): 1994 (RA 2009)	0.15 mg/L to 100 mg/L
		Manganese	3111B of SM (APHA)-2012	0.1 mg/L to 100 mg/L
		Silver	3111B of SM (APHA) 2012 AAS	0.10 mg/L to 100 mg/L
		Aluminium	3111D of SM (APHA) 2012 AAS IS 3025 (Part 58): 2006 (RA 2012)	1.0 mg/L to 100 mg/L
		Nickel	3111B of SM(APHA) 2012 AAS (Direct) IS 3025 (Part 54): 2003 (RA 2009)	0.10 mg/L to 100 mg/L
		Sodium & Potassium Flame Photometric Method	IS 3025 (Part 45): 1993 (RA 2009)	1 mg/L to 3000 mg/L
		Zinc	IS 3025 (Part 49): 1994 (RA 2009)	0.01 mg/L to 100 mg/L
		pH Value Electrometric Method	IS 3025 (Part 11): 1983 (RA 2012)	2 to 12
		Total Dissolved solid	IS 3025 (Part 16): 1984 (RA 2012)	5 mg/L to 10000 mg/L
		Volatile (organic) solids	IS 3025 (Part 18): 1984 (RA 2012)	5 mg/L to 2000 mg/L
		Fixed (Inorganic) solid	IS 3025 (Part 18): 1984 (RA 2012)	5 mg/L to 10000 mg/L

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	21 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Water (Drinking / Construction / Surface/ Borewell)	Nitrates –Nitrogen	IS 3025 (Part 34): 1988 (RA 2009) Chromo tropic acid method/ scanning method of SM (APHA)-2012	0.1 mg/L to 100 mg/L
		Conductivity	IS 3025 (Part 14): 2013	5 µmhos/cm to 20200 µmhos/cm
		Sulphates gravimetric/ turbidity Method	IS 3025 (Part 24): 1986 (RA 2009)	1 mg/L to 5000 mg/L
		Turbidity Nephelometric Method	IS 3025 (Part 10): 1984 (RA 2012)	1 NTU to 500 NTU
		Silica (SiO ₂) Ammonium Molybdate/ gravimetric method	IS 3025 (Part 35): 1988 (RA 2009)	0.5 mg/L to 100 mg/L
		Phosphates (Dissolved) Stannous Chloride Method	IS 3025 (Part 31): 1988 (RA 2009) Cl. 4.0	0.01 mg/L to 1000 mg/L

IX. OILS AND LUBRICANTS

1. Furnace Oil	Kinematics Viscosity	IS 1448 (Part 25): 1976 (RA 2007)	20 cst to 550 cst
	Density / Relative Density	IS 1448 (Part 32): 1992 (RA 2008)	0.800 gm/ml to 1.2 gm/ml
	Water Content	IS 1448 (Part 40): 1987 (RA 2010)	0.1 % to 25.0 %
	Total Sulphur	IS 1448 (Part 33): 1991 (RA 2008)	0.02 % to 5.0 %
	Flash Point(PMCC)	IS 1448 (Part 21): 2012	30 °C to 390 °C
	Ash content	IS 1448 (Part 4): 1984 (RA 2007)	0.01 % to 20.0 %

Laboratory	Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	15.01.2015
Certificate Number	T-0271	Valid Until	14.01.2017
Last Amended on	31.03.2015	Page	22 of 23

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Furnace Oil	Carbon Residue(CCR)	IS 1448 (Part 122): 2013	1.0 % to 20.0 %
		Inorganic Acidity	IS 1448 (Part 2): 2007	0 to 50 mg KOH/gm
		Sediment	IS 1448 (Part 30): 2013	0.1 % to 1.0 %
		Gross Calorific value	IS 1448 (Part 6): 1984 (RA 2007)	10 Cal/gm to 15000 Cal/gm
2.	HSD/LDO	Inorganic Acidity	IS 1448 (Part 2): 2007	0 to 10 mg KOH/gm
		Total Acidity	IS 1448 (Part 2): 2007	0 to 50mg KOH/gm
		Ash content	IS 1448 (Part 4): 1984 (RA 2007)	0.01 % to 10 %
		Carbon Residue (Rams bottom)	IS 1448 (Part 8): 2012	0.01 % to 30 %
		Pour Point	IS 1448 (Part 10): 2012	-35 °C to 70 °C
		Distillation	IS 1448 (Part 18): 1991 (RA 2010)	30 °C to 390 °C
		Flash Point(PMCC)	IS 1448 (Part 21): 2012	30°C to 350 °C
		Flash Point(Abel)	IS 1448 (Part 20): 1998 (RA 2008)	25 °C to 100 °C
		Kinematics Viscosity	IS 1448 (Part 25): 1976 (RA 2007)	2 cst to 16 cst
		Density / Relative Density	IS 1448 (Part 16): 1990 (RA 2007)	0.700 gm/ml to 1.000 gm/ml
		Total Sulphur	IS 1448 (Part 33): 1991 (RA 2008)	0.01 % to 10 %
		Water Content	IS 1448 (Part 40): 1987 (RA 2010)	0.1 % to 15%
		Gross Calorific value	IS 1448 (Part 6): 1984 (RA 2007)	100 Cal/gm to 15000 Cal/gm

Laboratory **Star Wire (India) Ltd., Diagnostic Centre, 21/4, Mathura Road, Ballabgarh, Haryana**

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

Discipline **Chemical Testing** **Issue Date** **15.01.2015**

Certificate Number **T-0271** **Valid Until** **14.01.2017**

Last Amended on **31.03.2015** **Page** **23 of 23**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	Lubricant Oil/ Hydraulic Oil/Gear Oil	Kinematic Viscosity At 40 & 100 Deg.	IS 1448 (Part 25): 1976 (RA 2007)	20 cst to 400 cst
		Viscosity Index	IS 1448 (Part 56): 2013	70 to 140
		Total Base Number	IS 1448 (Part 86): 1977 (RA 2010)	Upto 35 mg KOH/gm
		Total Acid Number	IS 1448 (Part 1): 2002 (RA 2007)	Upto 10 mg KOH/gm
		Pour Point	IS 1448 (Part 10): 2012	-50 °C to 50 °C
		Water Content	IS 1448 (Part 40): 1987 (RA 2010)	0.1 % to 10 %
		Flash Point (COC)	IS 1448 (Part 69): 2013	40 °C to 390 °C

-X-X-X-X-X-X-X-X-X-X-X-X-