Laboratory	**SRF Limited, Chemical Business Quality Assurance Laboratory, D-2/1, GIDC Phase-II, PCPIR, Dahej, District Bharuch, Gujarat**			
Accreditation Standard	**ISO/IEC 17025: 2005**			
Discipline	**Chemical Testing**	**Issue Date**	**21.07.2016**	
Certificate Number	**T-3050**	**Valid Until**	**20.07.2018**	
Last Amended on	**25.07.2016**	**Page**	**1 of 8**	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I.	**INDUSTRIAL & FINE CHEMICALS**			
1.	**Difluoroacetic acid ethyl ester (P-6)**	Appearance	QA/ STP/ General/ Appearance/01 Issue No.: 01 Effective Date: 14.09.2014	Qualitative
		Difluoroacetic acid ethyl ester (Ethyldifluoro acetate)	QA/ STP/ GC/ P6/ FP purity-Syngenta/ 06 Issue No.: 00 Effective Date: 10.04.2014	99.0 % w/w to 100.0 % w/w
		Individual organic by product (s)	QA/STP/ GC/P6/FP impurities-Syngenta/ 07 Issue No.: 00 Effective Date: 10.04.2014	0.01 % w/w to 0.40 % w/w
		Total other Difluoroacetate (Methyl-, Propyl-) calculated as EDFA	QA/ STP/ GC/ P6/ FP/ 05 Issue No.: 00 Effective Date: 10.04.2014	0.01 % v/v to 0.5 % v/v
		Ethanol	QA/ STP/ GC/ P6/ FP/ 05 Issue No.: 00 Effective Date: 10.04.2014	0.01 % v/v to 0.2 % v/v
2.	**3-difluoromethyl-1-methyl-1H-pyrazole-4-carboxylic acid (P-17a)**	Appearance (Color & Form)	QA/ STP/ Physical Appearance/ P17A/ 01 Issue No.: 01 Effective Date: 14.09.2014	Qualitative
		Content of CA4312 (3-difluoromethyl-1-methyl-1H-pyrazole-4-carboxylic acid)	QA/ STP-HPLC/ P17A/ FP/ 26 Issue No.: 00 Effective Date: 15.04.2014	95.0 % w/w to 100.0 % w/w

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3.	**3-difluoromethyl-1-methyl-1H-pyrazole-4-carboxylic acid (P-17b)**	Appearance (Color & Form)	QA/ STP/ Physical Appearance/ P17B/ 01 Issue No.: 01 Effective Date: 14.09.2014	Qualitative
		DFM-pyrazolic acid	QA/ STP-GC/ P17 step 3/30 Issue No.: 00 Effective Date: 15.04.2014	98.0 % w/w to 100 % w/w
4.	**3-Chloro-5-trichloromethyl-cyclopentene (P-18)**	Appearance	QA/ STP/ General/ Appearance/ Issue No.: 01 Effective Date: 14.09.2014	Qualitative
		Content of 3-Chloro-5-trichloromethyl-cyclopentene	QA/ STP-GC/ P18/ FP/ 10 Issue No.: 00 Effective Date: 10.04.2014	85.0 % w/w to 100 % w/w
5.	**2-Methyl-4-heptafluoroisopropylaniline (P-19)**	Appearance (Color)	QA/ STP/ General/ Appearance/01 Issue No.: 01 Effective Date: 14.09.2014	Qualitative
		Appearance (Form)	QA/ STP/ General/ Appearance/01 Issue No.: 01 Effective Date: 14.09.2014	Qualitative
		Content of 2-Methyl-4-heptafluoroisopropylaniline	QA/ STP-HPLC/ P19/ FP/ 29 Issue No.: 00 Effective Date: 20.04.2014	96.0 % v/v to 100 % v/v
6.	**Trichloro ethylene (TCE)**	Appearance	ASTM D3741-00 (2010)	Qualitative (Visual)
		Color	ASTM D2108-10	1 Hazen to 25 Hazen

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	Trichloro ethylene (TCE)	Purity as Trichloroethylene	ASTM D6806-02: 2012	99 % w/w to 100.00 % w/w
		Trans 1,2-Dichloroethylene	ASTM D6806-02: 2012	0.1 mg/kg to 25 mg/kg
		Cis 1,2-Dichloroethylene	ASTM D6806-02: 2012	0.1 mg/kg to 10 mg/kg
		1,1-Dichloroethylene	ASTM D6806-02: 2012	0.1 mg/kg to 10 mg/kg
		1,2 -Dichloroethane	ASTM D6806-02: 2012	0.1 mg/kg to 10 mg/kg
		1,1,1-Trichloroethane	ASTM D6806-02: 2012	0.1 mg/kg to 150 mg/kg
		1,1,2-Trichloroethane	ASTM D6806-02: 2012	0.09 mg/kg to 50 mg/kg
		Pentachloroethane	ASTM D6806-02: 2012	0.09 mg/kg to 50 mg/kg
		Hexachloroethane	ASTM D6806-02: 2012	0.09 mg/kg to 50 mg/kg
		Perchloroethylene	ASTM D6806-02: 2012	0.5 mg/kg to 50 mg/kg
		1,1,1,2-Tetrachloroethane	ASTM D6806-02: 2012	0.1 mg/kg to 5 mg/kg
		1,1,2,2-Tetrachloroethane	ASTM D6806-02: 2012	0.1 mg/kg to 5 mg/kg
		C3 Compounds Propane Dichloride 2 Chloro-2-Cyanopropane	ASTM D6806-02: 2012	0.1 mg/kg to 50 mg/kg
		C4 Compounds Pentachlorobutene Pentachlorobutadiene Hexachlorobutadiene	ASTM D6806-02: 2012	0.1 mg/kg to 40 mg/kg
		Chloroform	ASTM D6806-02: 2012	0.9 mg/kg to 50 mg/kg

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	Trichloro ethylene (TCE)	Carbon tetrachloride	ASTM D6806-02: 2012	0.1 mg/kg to 100 mg/kg
		Bromodichloromethane	ASTM D6806-02: 2012	0.09 mg/kg to 10 mg/kg
		Methylene chloride	ASTM D6806-02: 2012	0.1 mg/kg to 10 mg/kg
		Brominated Compounds 1-Bromo-2-Chloroethane Bromodichloromethane	ASTM D6806-02: 2012	0.09 mg/kg to 100 mg/kg
		Stabilizer Thymol	ASTM D6806-02: 2012	0.1 mg/kg to 10 mg/kg
		Stabilizer DIPA	ASTM D6806-02: 2012	0.1 mg/kg to 15 mg/kg
		Moisture	ASTM D 3401-97: (2012)	0 to 150 mg/kg
		Specific Gravity, 25/25°C	ASTM D2111-10	1.270 to 1.633
		Relative density, 27/27 ° C	IS:245–1988 A-2	1.270 to 1.633
		Acidity, as Hydrochloric Acid (HCl)	ASTM D2989-01 Method A (2011)	0.1 mg/kg to 10 mg/kg
		Alkalinity as Na_2CO_3	IS 245: 1988 (2011)	0.1 mg/kg to 200 mg/kg
		Alkalinity as NaOH	ASTM D2989-01 (2011)	0.1 mg/kg to 100 mg/kg
		Non-Volatile Residue	ASTM D 2109-01 (Test method B) (2011)	0.1 mg/kg to 50 mg/kg
		Residue on evaporation	IS 245: 1988, Method A-3	(0.1 mg to 20 mg)/100 mL
		Acid acceptance (as NaOH)	ASTM D2942-02: (2013)	0.16 % w/w to 0.20 % w/w
		pH	ASTM D2110-00: (2012)	6 to 13

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
7.	**Perchloro ethylene (Tetrachloroethylene) (PCE)**	Appearance	ASTM D3741-00: (2010)	Qualitative (Visual)
		Color	ASTM D2108-10	1 Hazen to 25 Hazen
		Purity as Perchloroethylene	ASTM D6806-02: 2012	99 % w/w to100.00 % w/w
		Trichloroethane	ASTM D6806-02: 2012	0.1 mg/kg to 25 mg/kg
		Moisture	ASTM D 3401-97: (2012)	0.5 mg/kg to 200 mg/kg
		Specific Gravity/Relative density	ASTM D2111-10/ IS 5297: 1977, A-2	1.590 to 1.625
		Acidity, as Hydrochloric Acid (HCl)	ASTM D2989-01 Method A (2011)	0.1 mg/kg to 5 mg/kg
		Alkalinity as Na_2CO_3	IS: 5297 - 1977	0.5 mg/kg to 200 mg/kg
		Alkalinity as NaOH	ASTM D2989-01 Method A (2011)	0.5 mg/kg to 300 mg/kg
		Non-Volatile Residue	ASTM D 2109-01 (Test method B) (2011)	0.5 mg/kg to 50 mg/kg
		Residue on evaporation	IS 5297: 1977 (2011)	(0.2 mg to 15 mg)/100 mL
		Acid acceptance (as NaOH)	ASTM D2942-02 Method A (2008)	0.05 % w/w to 0.16 % w/w
		pH	ASTM D2110-00 (Method-B)	6 to 13
		Distillation yield between 119 to 122°C	IS 5297: 1977	95 % to 99 %

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Perchloro ethylene (Tetrachloroethylene) (PCE)	**Copper Corrosion test** Weight loss of Cu strip in Flask	ASTM D3316-06: (2011)	(0.3 mg to 10 mg)/w/w
		Weight loss of Cu strip in Soxhlet	ASTM D3316-06: (2011)	(0.1 mg to 20 mg)/w/w
		Weight loss of Cu strip in condenser	ASTM D3316-06: (2011)	(0.4 mg to 20 mg)/w/w
		Acidity, as Hydrochloric Acid (HCl), ml of 0.01N NaOH	ASTM D3316-06: (2011)	(0.1 mL to 10 mL)/v/v
8.	**1,1,1,2-Tetrafluoroethane (R134a)**	Appearance	AHRI Standard 700 (Part 3): 2014	Qualitative (Visual)
		1,1,1,2-Tetrafluoroethane (R 134a) & R134)	AHRI Standard 700 (Part 9): 2014	99.0 % w/w to 100.00 % w/w
		Isomer Content	AHRI Standard 700 (Part 9): 2014	0.0 to 0.60 % w/w
		All Other Volatile Impurities	AHRI Standard 700 (Part 9): 2014	0 to 0.60 % w/w
		Halogenated unsaturated Volatile Impurities	AHRI Standard 700 (Part 9): 2014	0.0 to 50 mg/kg
		Water	AHRI Standard 700 (Part 2): 2014	0 to 100.0 mg/kg
		High Boiling Residue	AHRI Standard 700 (Part 3): 2014	0.0001 % w/w to 0.020 % w/w

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	1,1,1,2-Tetrafluoroethane (R134a)	Particulates/Solids	AHRI Standard 700 (Part 3): 2014	Qualitative (Visual)
		Acidity as Hydrochloric acid (HCl)	AHRI Standard 700 (Part 1): 2014	0.1 mg/kg to 5 mg/kg
		Chloride, no visible turbidity (Indicates about 3 ppm)	AHRI Standard 700 (Part 4): 2014	Qualitative (Visual)
		Air & other non-condensable in vapor phase, v/v, Maximum @ 25°C	AHRI Standard 700 (Part 5): 2014	0.02 % v/v to 5.0 % v/v
		Foreign Odor	AHRI Standard 700 (Part 3): 2014	Qualitative (Physical)
9.	**Trifluoroacetic acid (P2)**	Appearance	QA/ STP/ General/ Appearance/01 Issue No.: 01 Effective Date: 14.09.2014	Qualitative (Visual)
		Purity by Titrimetry	QA/ STP/ P2/ FP/ 13 Issue No.: 00 Effective Date: 10.03.2016	99.9 % w/w to 100 % w/w
		Moisture	QA/ STP/ General/ Water liquid Issue No.: 01 Effective Date: 14.09.2014	0.0100 % w/w to 0.0500 % w/w
10.	**Ethyl Tri-fluoro Acetate (P7)**	Appearance	QA/ STP/ GC/ P7/ FP/ 02 Issue No.: 01 Effective Date: 14.09.2014	Qualitative (Visual)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Ethyl Tri-fluoro Acetate (P7)	Purity by GC	QA/ STP/ GC/ P7/ FP/ 02 Issue No.: 00 Effective Date: 14.03.2016	99.5 % v/v to 100 % v/v
		Moisture	QA/ STP/ GC/ P7/ FP/ 02 Issue No.: 01 Effective Date: 14.09.2014	0.0200 % w/w to 0.1000 % w/w
11.	**Pentafluorophenol (P29)**	Appearance	QC/ STP/ P29/027 Issue No.: 01 Effective Date: 14.09.2014	Qualitative (Visual)
		Purity by GC	QC/ STP/ P29/027 Issue No.: 00 Effective Date: 01.02.2016	99.5 % v/v to 100 % v/v
		Moisture	QC/ STP/ P29/027 Issue No.: 01 Effective Date: 14.09.2014	0.01 % w/w to 0.25 % w/w

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