



Fuel from Plastic Waste

through

DEPOLYMERIZATION TECHNOLOGY



Based in Hyderabad, 14 years of experience in Depolymerization field

Holds patent since 2010

Supply turn-key projects

Can process any kind of Plastic waste that are not recycled

Set up many plants in India since 2013

Exclusive projects for carpet, PUF, e-waste, FRP, Legacy waste and plastics from MSW

Executed 5 , 10 and 20 tpd plants

100% Indian Technology

**Capacity ranges from
5 TPD to 20 TPD and in Multiples**



Patented

**International Quality
& components**

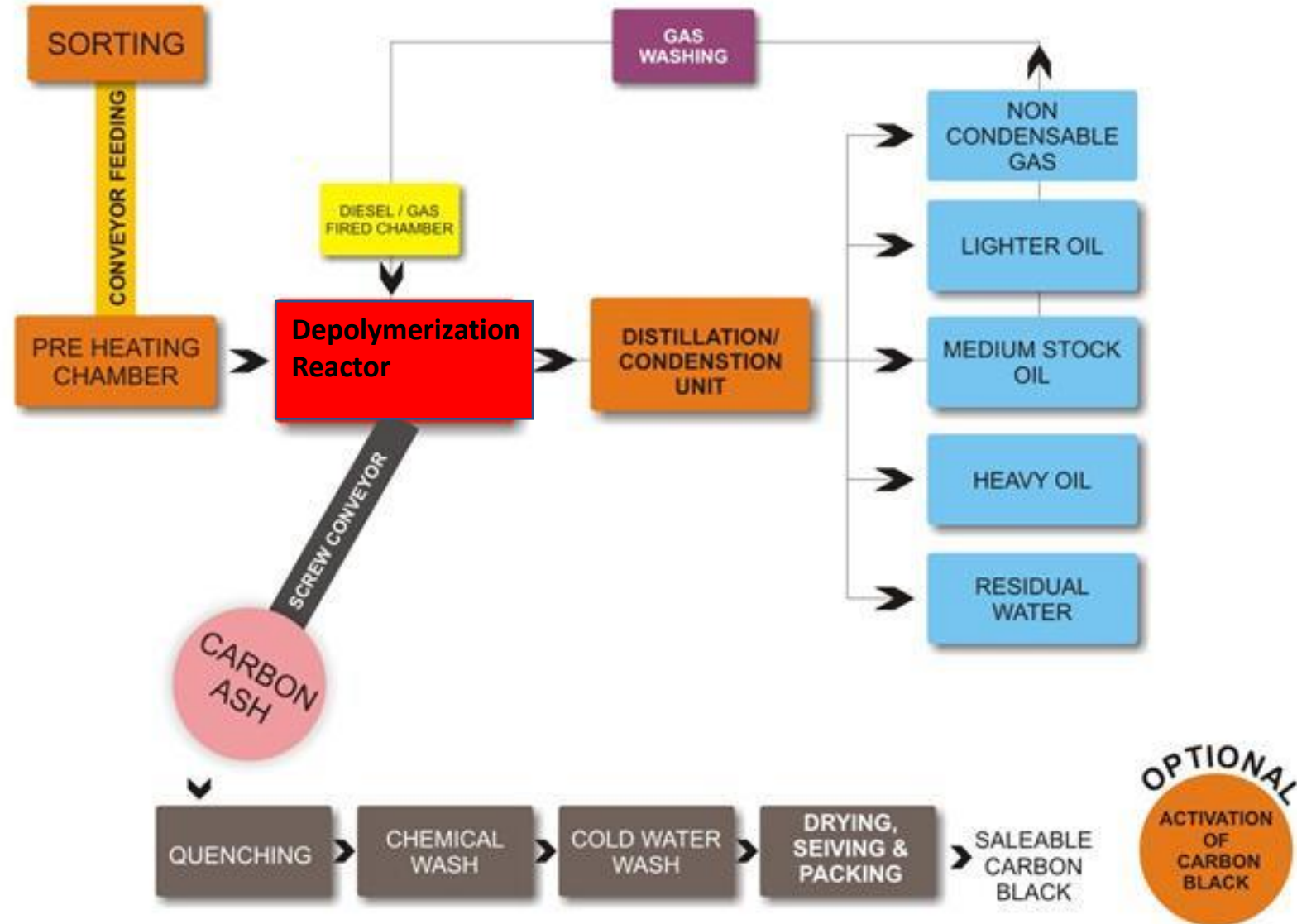
Why Pyrogreen..

- **Unique Catalyst** - which makes it possible to process all kinds of Mixed Plastics, including plastic waste collected from MSW
- **Can process PVC** in any form without emitting dioxins or furans.
- Most **Economical and Affordable** technology
- Higher **Return on Investment** & Shorter **Pay Back period**
- **International Standards and Quality**
- Safety Features conforming to **International Norms**
- Emission level as per the EU requirement
- **Oil is of Euro IV Grade Quality**

Why Pyrogreen..

- **Any difficult to Recycle Materials can be processed**
- Carpet Waste which consists of both bitumen and PVC as base
- Thermocole (EPS) & PUF (Poly Urethane Foam) which is voluminous in waste stream
- FRP which has glass fiber and cannot be recycled by any other recycling methods
- Plastics film less than 20 micron thickness which is difficult to recycle
- Multilayer Films, Stickers Labels, Adhesive Tapes or Torn Plastics, Oven Sacks, Carry Bags etc .
- Composite barrier films such as PET +PE, Nylon +PE, PE+PP+PE etc

PROCESS TO EXTRACT FUEL FROM WASTE PLASTICS & RUBBER



TYPE OF PLASTIC WASTE THAT WE CAN PROCESS



All kind of mixed Plastics
found in MSW



Polyurethane Foam -PUF



Metallized Film



Bio-mining waste



Adhesive Tapes



Thermocole



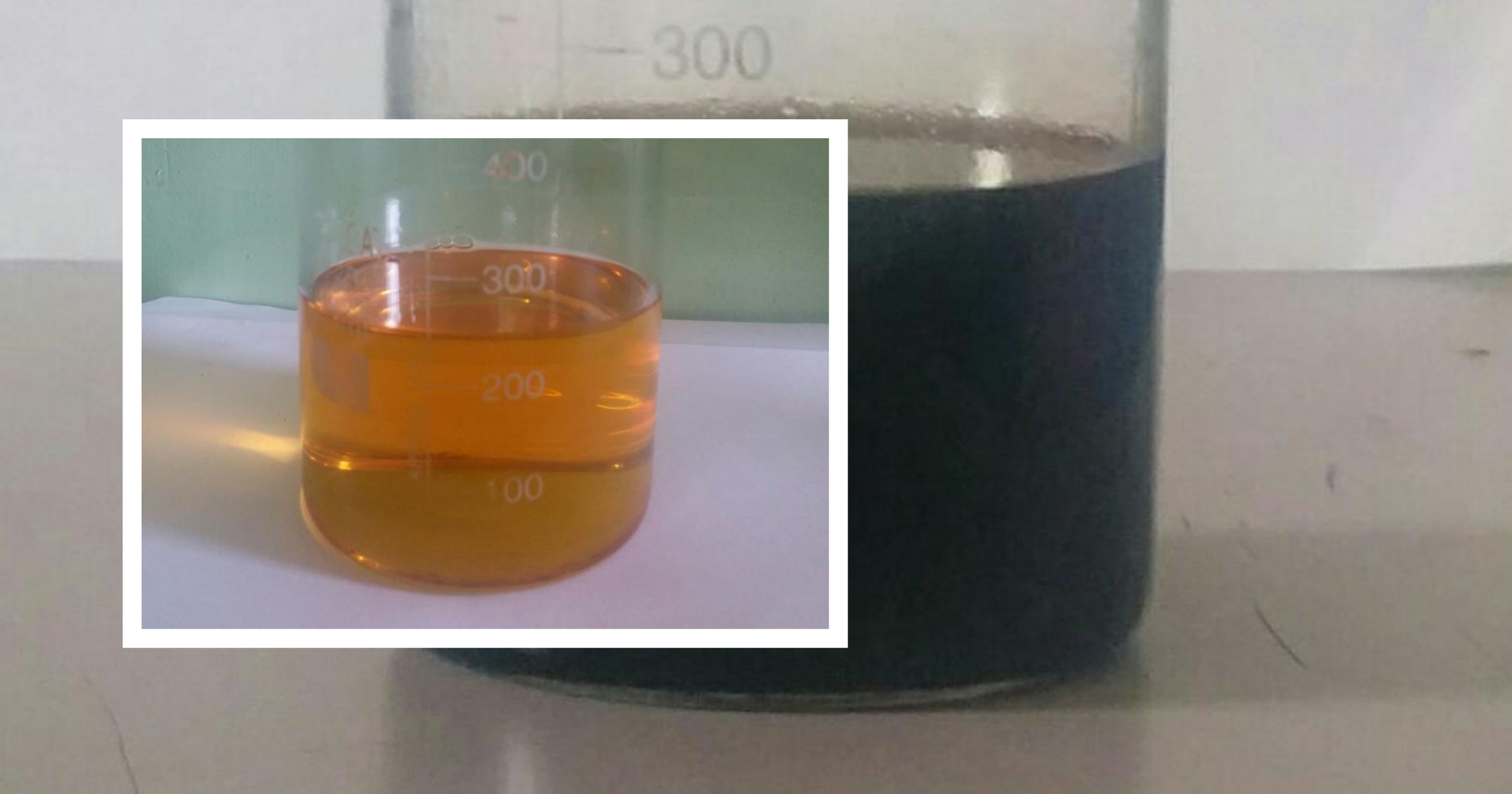
Multilayer Films



FRP Fibre Reinforced
Plastics



From Legacy Waste





EURO-4 DIESEL

Depolymerized Oil is possible to convert to EURO IV grade with Sulphur level less than 50 ppm.



REFERENCE PLANTS & TYPES



REFERENCE PLANTS & TYPES



10 TPD plant 2022



क्रमांक : 044 024518
Sl. No. :



INTELLECTUAL
PROPERTY INDIA
PATENTS/DESIGNS/TRADE MARKS/
GEOGRAPHICAL INDICATIONS



भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE
पेटेंट प्रमाणपत्र
Patent Certificate
(Rule 74 of Patents Rules)

Patent Number : 280292
Application Number : 2341/CHE/2010
Date of Filing : 13/08/2010
Patentee : S. SAMPATH

It is hereby certified that a patent has been granted to the patentee for an invention entitled SYSTEM OF PROVIDING PREHEATING, MULTI-GATE FEEDING WITH CONTINUOUS ASH REMOVAL IN PYROLYSIS PROCESS as disclosed in the above mentioned application for the term of 20 years from the 13 day of AUGUST 2010 in accordance with the provisions of the Patents Act, 1970.

Karthika
Controller of Patents

Date of Grant: 16/02/2017

Controller General of Patents,
Designs & Trademarks

प्रारूप ओ - 2
Form O - 2



भारत सरकार
Government of India
व्यापार चिन्ह रजिस्ट्री
Trade Marks Registry

क्रमांक
No. 1447021

व्यापार चिन्ह अधिनियम, 1999
Trade Marks Act, 1999

व्यापार चिन्ह के रजिस्ट्रीकरण का प्रमाणपत्र, धारा 23 (2), नियम 62 (1)
Certificate of Registration of Trade Mark, Section 23 (2), Rule 62 (1)

व्यापार चिन्ह संख्या / Trade Mark No. 2164749

दिनांक / Date 23/06/2011

ज. संख्या / J. No. 1551

यह प्रमाणित किया जाता है कि जिस प्रकार चिन्ह की समस्तता इसके साथ संलग्न है, वह के बारे में दिनांक नाम से रजिस्ट्रीकृत हो चुका है।

Certified that Trade Mark / a representation is annexed hereto, has been registered in the name(s) of:-
PYROGREEN ENERGY PRIVATE LIMITED, 101, Plot No. 12-2-709/C/207, Padmanabha Nagar, Mehdiapatnam Hyderabad - 500028.,
Manufacturers and Traders, (Body Incorporate)

In Class 9 Under No. 2164749 as of the date 23 June 2011 in respect of

Goods and service as annexed

PYROIL-7X

मेरे निर्देश पर आज के मास के वे दिन को इस पर मुद्रा लगायी गई

Sealed at my direction, this 19th day of January, 2017



व्यापार चिन्ह रजिस्ट्री
Trade Marks Registry MUMBAI

व्यापार चिन्ह रजिस्ट्रार
Registrar of Trademarks

रजिस्ट्रीकरण अर्पण की तारीख से 10 वर्ष के लिए है और तदनुसार यह 10 वर्ष की अवधि के लिए और प्रत्येक 10 वर्ष की अवधि के अवकाश पर भी नवीनीकृत किया जा सकता है।

Registration is for 10 years from the date of application and may then be renewed for a period of 10 years and also at the expiration of each period of 10 years.




यह प्रमाणपत्र विधि कार्यवाही में प्रयोग के लिए या विदेश में रजिस्ट्रीकरण अर्पण करने के लिए नहीं है।

This certificate is not for use in legal proceedings or for obtaining Registration abroad.

टिप्पणी - इस व्यापार चिन्ह के स्वामित्व में कोई परिवर्तन होने पर, या कारोबार के मुख्य स्थान के पते में या भारत में लक्ष्य के लिए पते में परिवर्तन होने पर परिवर्तन के लिए अविलंब अनुरोध किया जाना चाहिए।

Note: Upon any change of ownership of this Trademark, or change in address, of the principal place of business or address for service in India a request should be made to register the change.

Output Quality

E-mail : test@mettexlab.com Web : www.mettexlab.com				Phone : 044-22323163, 42179496, 91 Fax : 044 22311034			
 CHENNAI METTEX LAB PRIVATE LIMITED							
Jothi Complex, 83, M.K.N. Road, Guindy, Chennai - 600 032. (Approved/Recognized by APEDA, AGMARK, GAFTA, EIC, FSSAI, BIS & MoEF)							
TEST REPORT							
Page No. 1 of 1							
ISSUED TO : M/s. Sun Global, Chennai. Sample: oil from Pyrogreen, Hyderabad				T.C Date : 15.12.2020 T.C No : CML/20-21/40899 Date of Receipt : 11.12.2020 Commenced on : 13.12.2020 Completed on : 15.12.2020			
Cust. Ref : SRF Dated : 10.12.2020 Lab No : 2147110							
Sample Name : Pyrolysis Oil - Plastic.							
S. No	Test Parameters	Test Method	Test Result				
1	Ash Content, % by mass	IS 1448 Part 4	< 0.01				
2	Carbon Residue (Ramsbottom) on 10% residue (on whole sample), % by mass	IS 1448 Part 8	0.24				
3	Pour Point, °C	IS 1448 Part 10	(-) 8				
4	Copper Strip Corrosion Test @ 100°C for 3 Hours	IS 1448 Part 15	1a, lightly orange and freshly polished strip				
5	Flash Point (PMCC), °C	IS 1448 Part 21	77				
6	Kinematic Viscosity @ 40°C, cSt	IS 1448 Part 25	2.24				
7	Sediments, % by mass	IS 1448 Part 30	< 0.01				
8	Density @ 15°C, gm/cc	IS 1448 Part 16	0.811				
9	Total Sulphur, % by mass	Using ICP - OES	0.52				
10	Water Content, (% by volume)	IS 2362 (by Karl Fisher)	0.12				
11	Gross Calorific Value, Kcal/gm	ASTM - D 4809	10915				
12	Acidity, inorganic	IS 1448 : Part 2	NIL				
13	Asphaltenes (N-Heptane Insolubles), % by weight	ASTM D 6560	0.25				
14	Cleanliness spot rating	ASTM D 4740	No.2				
15	Distillation Percent V/V Recovered at 350°C, % by weight	IS 1448 Part 16	97				
16	Distillation Percent V/V Recovered at 370°C, % by weight		97				
17	Total Acidity	IS 1448 Part 8	NIL				
18	Total Contamination, mg/kg	EN 12662 : 2014 (E)	114				
19	Polycyclic Aromatic Hydrocarbons (PAH), % by weight	IP 346	0.45				
			For Chennai Mettex Lab Private Limited  Dr. D. SATHYA NARAYANAN Quality Manager				
NOTE: Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders will be liable for legal action. Unless otherwise stated the submitted results in this test report refer only to the sample(s) tested and such sample(s) are retained for 15 days only from the completion date of testing, except in case of regulatory samples, which will be retained for a specific period as per statutory requirement, while, perishable & environmental testing related remnant samples will be discarded consequent upon completion of testing. Samples are not drawn by us unless otherwise stated. This document cannot be reproduced except in full, without prior written approval of the laboratory. This report is for the exclusive use of Chennai Mettex Lab's customer, and is provided in accordance with the agreement between Chennai Mettex Lab and its Customer.							

Emissions from Chimney:

STACK EMISSION TEST RESULTS				
NO	TEST	RESULT	CPCB STANDARDS	EU Standards
1.	Concentration of particulate matter (Dust)	18.4 mg/Nm ³	115mg/Nm ³	10 mg/Nm ³
2.	Sulphur Dioxide (SO ₂)	31.1 mg/Nm ³	80 mg/Nm ³	50 mg/Nm ³
3.	Oxides of Nitrogen (NOX)	42.6 mg/Nm ³	120 mg/Nm ³	200 mg/Nm ³
4.	Carbon Dioxide (CO ₂)	0.15%	0.13%	-Not available-
5.	Carbon Monoxide (CO)	2.7 mg/nM ³	3.5mg/Nm ³	50 mg/Nm ³



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