

Waste Management

Pyrolysis Oil Purification Technology

APPLICATION

The applications for PUROIL are Advanced/Chemical recycling of plastic waste, Production of 2nd generation biofuels from plastic waste, Production of circular economy plastics and sustainable chemicals, Landfill plastic waste management, Multilayer packaging plastic waste management, Recycling of postconsumer plastic waste & Plastic to fuel and chemicals.

COMPANY NAME	TECHNOLOGY READINESS LEVEL (TRL)	INTELLECTUAL PROPERTY
APChem Pvt Ltd	TRL: 8 (Manufacturing unit setup for scaling up)	Granted Indian Patent: 374847, 412534, 425480, 493062
FOUNDER'S NAME		Indian patent applications numbers: 202021044836, 202021047134, 202021055299, 202021055940, 202121000068, 202121000628, 202121020957, 202121021166, 202121024040, 202121034264, 202121053114
Suhas Dixit		

PROBLEM ADDRESSED

Globally 300 million metric tons per annum of plastic waste generated and less than 9% of plastic waste is currently recycled. Most of the plastic waste generated today is mechanically non-recyclable. Hence needs to be recycled chemically by converting this plastic waste into circular economy plastics and sustainable chemicals via pyrolysis technology. The key problem in pyrolysis of plastic waste is production of oil with very high impurities of oxygen, chlorine, asphalt, silica, nitrogen and Sulphur. APChem's PUREMAX™ technology drastically reduces these impurities from pyrolysis oil to manufacturing PUROIL™. PUROIL™ can replace petroleum naphtha and crude oil for production of circular economy plastics and sustainable chemicals.

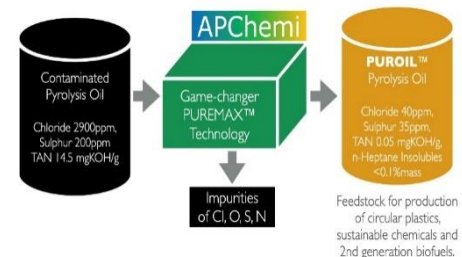
ABOUT THE TECHNOLOGY

APChem's pyrolysis oil purification technology, PUREMAX, removes organic as well as inorganic impurities of Chlorine, Nitrogen, Oxygen, and Sulphur from pyrolysis oil. Patent-granted PUREMAX™ technology has a very unique novel and inventive step. APChem is actively looking for partners to synergistically exploit this technology. Pyrolysis oil, produced from Mumbai's post-consumer laminate (Packaging + Carry bags) waste, had a Chlorine content of 2900ppm, Sulphur of 200ppm and Total Acid Number (TAN) of 14.5 mgKOH/gm. After application of APChem's PUREMAX™ technology, the oil quality was improved to Chlorine < 50ppm, Sulphur < 50ppm, 10 mg KOH/gm, n-Heptane Insolubles <0.1%mass. Thus, PUREMAX™ technology truly unlocks pyrolysis based chemical recycling of plastic waste.

FUNDS RAISED/ACHIEVEMENTS

- Raised INR 30 lakhs in CCD from Startup India Seed Fund Scheme at KIIT-TBI.
- Winner of Clean Air India Challenge hosted by Smart Cities Procurement, ACT Grants and Social Alpha (April 2022)
- Received Grant in aid of USD 1.2 million Indo-Danish Green Hydrogen Call

PRODUCT IMAGE



USP

- Drastically reduce oil impurities due to PVC/ PVDC/ PET/ Nylon/ PUR/ Acrylates contaminated polyolefin feedstock'
- Enable use of landfill and post-consumer plastics waste for plastic pyrolysis

END USERS / CUSTOMERS

- Petrochemical Companies, FMCG Companies, Packaging Companies & Industries, Biofuels, Carbon Transition, Plastic circularity and Material Recovery facilities