

CSIR-NCL, RIL join hands to recycle COVID-19 PPE waste

Synopsis

There has been a substantial increase in demand for single-use plastic items, since the Covid-19 pandemic. More than 200 tonne of COVID-19 related waste was generated every day across India in May 2021.



"CSIR-NCL and RIL have now signed an MoU to scale up the production to pilot-scale, laying a path to take the concept to the national level," the statement said.

CSIR-National Chemical Laboratory (**CSIR-NCL**), Pune jointly with Reliance Industries Ltd and several other companies from Pune have achieved a breakthrough to manufacture useful moulded plastic components from COVID-19 **PPE** waste. The successful "pilot project has the potential to scale up and replicate throughout the country to convert **PPE waste** into useful and safe products," **RIL** **NSE -0.40 %** said in a statement.

A pilot project converted the decontaminated PPE waste (mainly comprising PPE suits/overalls) into an easily processable and upcycled agglomerated form (pellets or granules). The polymer pellets can find usage in non-food applications, including high-performance automotive components.

A substantial increase in demand for single-use plastic items such as Personal Protective Equipment (PPE), masks and gloves has been witnessed since the pandemic.

Across India, more than 200 tonne of **COVID-19** related waste was generated every day in May 2021. So far, this hazardous PPE waste is incinerated at central waste management (BMWM) facilities. Incineration is energy-intensive and leads to the release of harmful greenhouse gases.

"CSIR-NCL, RIL and other companies embarked on a mission to develop an end-to-end process for effective recycling of COVID-19 plastic waste to produce value-added plastic products ensuring decontamination of COVID-19 plastic waste, focusing on the conversion of the plastic waste suitable for downstream processing and identification of potential stakeholders/markets for creating value for entire supply chain," it said.

In a proof-of-concept study, CSIR-NCL team successfully demonstrated the lab-scale manufacture of moulded automotive products from the decontaminated PPE plastic waste by leveraging the existing recycling infrastructure available in Indian cities.

"CSIR-NCL and RIL have now signed an MoU to scale up the production to pilot-scale, laying a path to take the concept to the national level," the statement said.

A pilot-scale of 100 kg in the Pune city area was successfully implemented by collaborating with Pune-based companies -- APPL Industries, SKYi Composites, Harsh Deep Agro Products, Urmila Polymers, Jai Hind Autotech Pvt Ltd -- who

produced value-added products.

The feed material (PPE kits) was collected and decontaminated by Passco Environmental Solutions, a waste management company located in Pune.

CSIR-NCL secured all regulatory approvals needed from Maharashtra Pollution Control Board (MPCB) to complete this pilot trial.

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