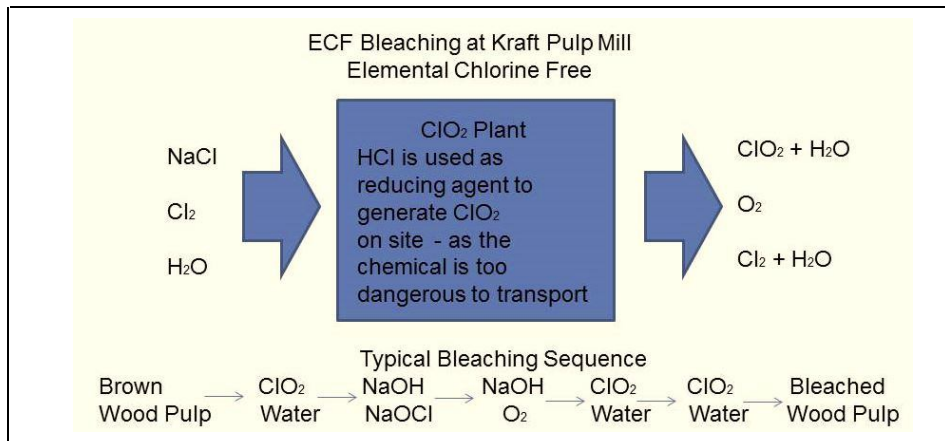


# Chlorine Dioxide

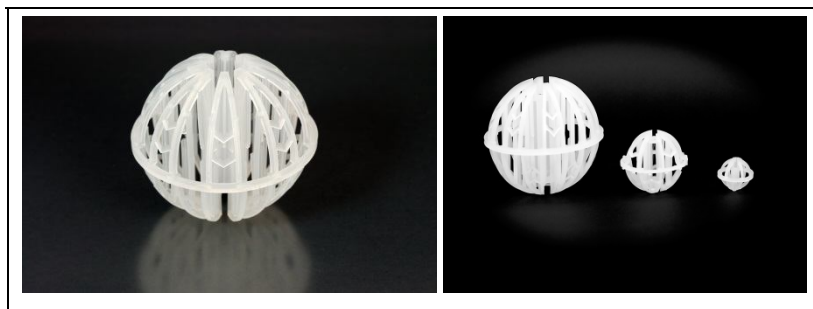
## ClO<sub>2</sub> Scrubber Packing at Kraft Pulp Mills



Elemental Chlorine Free – ECF – bleaching of wood pulp using Chlorine Dioxide, ClO<sub>2</sub>, as the primary bleaching agent eliminates dioxin emissions. This is a reflection of the fact that as a bleaching agent ClO<sub>2</sub> is 10 times more reactive than elemental Chlorine, Cl<sub>2</sub>. As a powerful oxidizing agent ClO<sub>2</sub> must be generated on site – it is too dangerous to transport by either rail or highway. Approximately 90% of white papers today are made using ECF bleached wood pulp. And also any trace amount of ClO<sub>2</sub> that escapes either the ClO<sub>2</sub> generator or the bleach plant at the kraft mill must be captured and scrubbed in a packed tower. At just 5 ppm concentration ClO<sub>2</sub> if breathed is capable of causing serious lung damage.



A typical ClO<sub>2</sub> generator and kraft mill bleach sequence are shown above. Note that in addition to the generator that in the bleaching process that there are several places where fugitive emissions of ClO<sub>2</sub> must be addressed. Typically, these emissions are captured and passed through a counter-current scrubbing tower. The packing of choice for the tower being 3.5" Jaeger Tri-Packs® in PVDF resin, seen left below, to resist the powerful oxidizing power of ClO<sub>2</sub>



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