



Company
Vestolit

Sector:
PVC resin

Location:
Altamira, Tamaulipas, México

Date: September, 29th, 2020

ABOUT VESTOLIT



Mexichem Resinas Vinílicas, known as Vestolit, is a worldwide company that belongs to Orbia business group. It has production plants in Germany, USA, Colombia and Mexico. Produces and markets PVC resins (Polyvinyl Chloride). One of its plants in Mexico is located in Tamaulipas and is called Planta Altamira I. This plant manufactures PVC resin through the polymerization of VCM by suspension. Its annual production is approximately 374 743tons (2019 data).



MAIN PRODUCTS

PVC comes from the polymerization of Vinyl Monochloride (VCM). It is classified as one of the most versatile plastics, when mixed with additives can be transformed into rigid, flexible and thermoplastic products. Its properties include a high capacity for thermal, electrical and acoustic insulation, low flammability, non-toxicity, impermeability to liquids and gases, excellent mechanical resistance and asepis. It is 100% recyclable. The micro suspension type PVC resin is mainly used for the manufacture of low viscosity pastes such as plastisols or other flexible materials.

It is used mainly for the manufacture of plumbing pipes, construction applications such as window frames, floors, roofs, and even complete houses. Likewise, in the automotive industry, in clothing, food packaging, infusion elements, oxygen masks, blood bags and medicine packaging, among others.



CONTEXT

The polymerization process is carried out in a liquid medium consisting mainly of water. For this purpose, Altamira I plant is supplied from Champayán Lagoon (it is part of Panuco hydrological basin), which has low water stress. The final discharge takes place in El Conejo Lagoon (it is part of L. de San Andrés - L. Morales Basin).



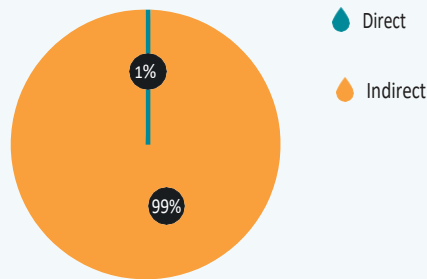
GOAL AND SCOPE

Quantify the water footprint of suspension PVC resin produced at Vestolit Altamira I plant, in 2019.

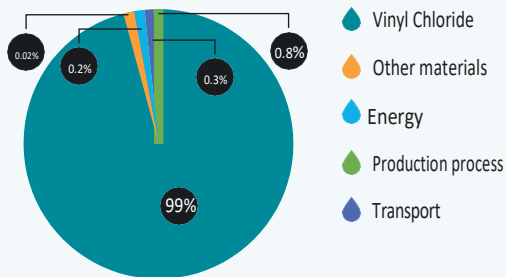


WATER CONSUMPTION

Total water consumption includes both: indirect consumption during the manufacture of raw materials and their transport to Mexico, as well as direct consumption in the plant associated with the production process.



Detail of both direct and indirect consumption



SYSTEM BOUNDARY

From raw material supply to manufacture stage (cradle to gate).



FUNCTIONAL UNIT

Production of 1 ton of suspension PVC resin.



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WATER FOOTPRINT PROFILE

The main impact on water scarcity is due to Vinyl Chloride production in Texas-USA, which has a medium water stress. The impact of Vestolit plant is mainly related to electricity and natural gas consumption for the operation of machinery and equipment, steam generation, resin drying and the use of wooden pallets as auxiliary material for the packaging of the product.



AREAS OF OPPORTUNITY

Review the possible supply of energy from renewable sources or cogeneration projects, since the consumption of water associated with electricity generation contributes with a considerable impact on the water footprint.

Look for alternative materials to wooden pallets that are required for packaging and transport of resin, since their impact on ecotoxicity is significant.



MAIN MITIGATION ACTIONS

Establishment of objectives for corporate water management, which reduce the consumption of fresh water from underground wells and decrease the discharge to the lagoon.

