

Product family: **Unsaturated Polyester Resin (UPR)**

Scope considered: **ALTA Performance Materials EMEA - Cradle to gate**

Date of analysis: **Oct. 2025**

Data base: **ecoinvent 3.11**

Software used: **Umberto**

Method used: **UPR model as built in ecoinvent is used as reference and updated according to the product Bill of Material. Market data from ecoinvent 3.11 and primary data from raw material supplier are considered in the analysis for the Raw Materials.**

Standards: **ISO 14040 / 14044**

LCA methodology: **EF 3.1**

Climate change - Total		2.77E+00 kg CO2-Eq/kg
Biogenic		1.79E-03 kg CO2-Eq/kg
Land use and land use change		2.20E-03 kg CO2-Eq/kg
Fossil		2.76E+00 kg CO2-Eq/kg
Human health		
Carcinogenic effects - Selection		1.85E-09 CTUh/kg
Carcinogenic effects - Organic		1.55E-09 CTUh/kg
Carcinogenic effects - Inorganic		2.92E-10 CTUh/kg
Non-carcinogenic effects - Total		2.26E-08 CTUh/kg
Non-carcinogenic effects - Organic		1.81E-09 CTUh/kg
Non-carcinogenic effects - Inorganic		2.08E-08 CTUh/kg
Respiratory effects, inorganics		7.57E-08 Disease incidences/kg
Ozone layer depletion		2.74E-07 kg CFC-11-Eq/kg
Photochemical ozone creation		1.19E-02 kg NMVOC-Eq/kg
Ionizing radiation		2.23E-01 kBq U235-Eq/kg
Ecosystem quality		
Freshwater ecotoxicity - Total		3.09E+01 CTUe/kg
Freshwater ecotoxicity - Organic		5.98E-01 CTUe/kg
Freshwater ecotoxicity - Inorganic		3.04E+01 CTUe/kg
Freshwater eutrophication		6.36E-04 kg P-Eq/kg
Marine eutrophication		1.79E-03 kg N-Eq/kg
Terrestrial eutrophication		1.82E-02 mol N-Eq/kg
Freshwater and terrestrial acidification		9.35E-03 mol H+-Eq/kg
Resources		
Fossils		6.77E+01 MJ/kg
Minerals and metals		2.55E-05 kg Sb-Eq/kg
Land use		7.05E+00 points/kg
Water scarcity		6.00E-01 m3 world-Eq deprived/kg

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