

LIFE CYCLE ASSESSMENT (LCA) OF PAINT AND VARNISH PRODUCTION THROUGH TO ENVIRONMENTAL LABEL CRITERIA

As a result of industrialization and the development and leveling of technology, the chemicals in the products and structures have become more complex, and the studies on minimizing the damage to the environment have intensified. There is an increasing trend in societies toward using more sustainable products. Indeed, ensuring the production of more environmentally friendly and sustainable products requires that the effects of products on nature throughout their life cycle are kept under certain limits. In this respect, there are some initiatives all of the World to encourage and support the sustainable production. For example, the EU Eco-Label, a voluntary scheme, distinguishes ecologically friendly goods and services. Similarly, The Ministry of Environment, Urbanization, and Climate Change of Turkey recently started to award the environmental label based on the established criteria for a specific good or service. Yet, the criteria were established for a few products. In these initiatives, life cycle assessment (LCA) is used to identify the most significant environmental impacts as a basis for defining criteria for an award of an environmental label and/or ecolabel. In this respect, the purpose of this thesis is to perform a LCA study which will form a basis in developing the environmental label criteria for paint and varnish products in the Turkish market. Simapro software will be used to assess the environmental impacts of paint and varnish production. Inventory data will be gathered from the real sector representatives in Turkey, so that the results obtained will be specific for our country. The functional unit will be a ton of paint/varnish. System boundary will be selected as cradle to grave.

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