ELASTOSIL® eco
RESOURCE-EFFICIENT ECO SILICONE ELASTOMERS

Climate Change Requires New Methods

Through its use of renewable raw materials, WACKER has taken an initial step toward a climate-neutral circular economy – striving as always to increase the proportion of renewables in its production and to expand its line of eco products. The application of the mass balance approach is the tool WACKER uses to achieve this aim.

Two Methods for Saving Resources

The mass balance approach replaces fossil raw materials with renewables in one of two ways: through substitution or compensation.

Substitution involves the 1:1 replacement of the fossil-based material with the renewable resource. The bio-based equivalent is chemically identical with the fossil material it replaces and its properties are the same. In many supply chains, however, it can be difficult or even impossible to procure renewable alternatives to certain raw materials.

The mass balance method offers a solution here as well – via compensation. When no bio-based equivalent with the same properties exists for a fossil feedstock, the material is offset by using a bio-based raw material at another point in the production process. In this case, the quantity of the non-fossil raw material does not have to be identical with that of the offset material as measured in kilograms or liters. The critical parameter here is the usable thermal energy released upon combustion – the lower calorific value, in other words – which must be the same for both materials.

Expanding Eco Production

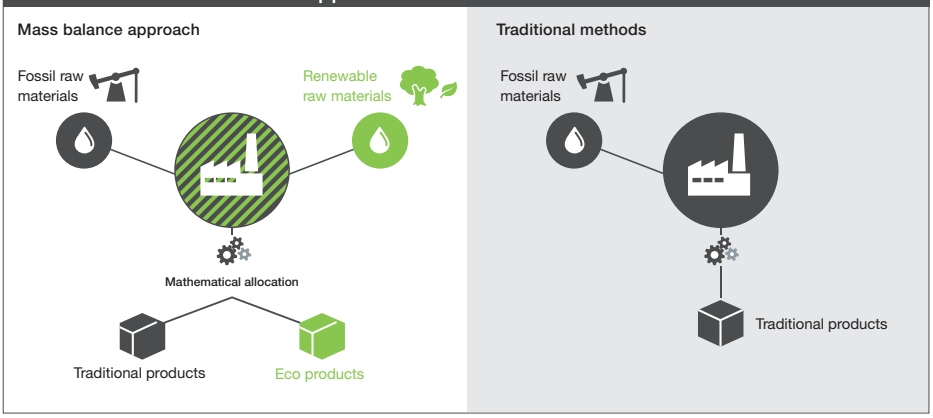
While demand for eco products is growing, it is not yet dominating the market. For this reason, WACKER continues to produce traditional and mass balance products in parallel – in a single production plant.

When customers purchase one of its mass balance eco products, WACKER feeds the bio-based raw material into production instead of its fossil-based equivalent. The alternative feedstock then mixes with the fossil raw material within the integrated production network. Using the mass balance approach, the non-fossil feedstock previously fed into the system can then be allocated to mass balance products. This is purely a mathematical process: the amount of bio-based raw material used is apportioned to the mass balance product – mathematically speaking, all remaining product is therefore based on fossil feedstocks.

Certified Bio-Based Raw Materials

WACKER currently uses bio-based methanol for the mass balance method. Biomethanol is generated in a synthesis reactor via steam reforming, using a gas produced from straw as the raw material for the process. The resulting biomethanol is ISCC-certified.

The WACKER Mass Balance Approach



The goal here is to continually raise the proportion of sustainable raw materials used in production.

High-Quality ELASTOSIL® eco Silicone Elastomers

When customers purchase an ELASTOSIL® eco grade, they receive a REDcert² certificate.

This certified product is identical to its fossil counterpart in terms of specifications, quality and performance. Customers will not need to alter their formulations in any way.

At the moment, we offer:

Peroxide-curing HCR

- ELASTOSIL® eco R 401/40 S

Platinum-curing HCR

- ELASTOSIL® eco R *plus* 4020
- SILMIX ® eco R *plus* TS 40002

Liquid silicone rubber

- ELASTOSIL® eco LR 5040/20-70

Citric press made from SILMIX® eco R *plus* TS 40002 based on ELASTOSIL® – a one-component, food-contact-compliant, platinum-curing, solid silicone rubber.

Advantages of the Mass Balance Approach

1. Conserves fossil resources without compromising formulations or quality
2. The resulting environmental impact can be quantified using the carbon mass balance technique designed specifically for this purpose
3. Serves as a drop-in solution that enables the transition to a higher proportion of certified renewables
4. Meets the criteria of the REDcert² standard for tracing renewable raw materials and is audited by third parties
5. Can be applied to a very large range of products

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