Additives and specialty resins sold under the TEGO brand support our customers to produce durable and resource efficient coatings. Thus our additives and specialty resins help modern coating systems to protect natural resources.

TEGO® Airex deaerators prevent the formation of air inclusions and pinholes in waterborne, solventborne and radiation-curing coatings. This is particularly important in high viscosity or high solids formulations and essential for airless/airmix application in high film thickness.

This document provides the required Life Cycle Assessment data to give our customers the opportunity to calculate the environmental performance of their coating formulations,

Framework of the LCA

Goal: Calculating the environmental performance of the production of products sold under the TEGO brand.

System boundary: Cradle-to-Gate

Functional unit: 1 kg of TEGO® Airex 900

Data sources: Primary data was used for the production process (average Evonik process data in the year 2012). Secondary data was used for raw materials (mainly GaBi 6 Database (PE International, Stuttgart, Germany)). The software GaBi 6 was used for the LCA modeling.

Cut-off rules for the inventory: Below 1% for single inputs and below 5% for the sum. No environmentally relevant flows were neglected. Some utilities of production processes have been modeled analogue to known processes. Transports have been considered but distances have mainly been estimated. The result uncertainty in all categories is about ± 20% as these results base on several assumptions.

Impact Assessment: The established method of the Dutch Environmental Science Research Centre Leiden (CML) with characterization factors from November 2010 was used.
### Results of the Life Cycle Assessment (Estimation, Cradle-to-Gate)

<table>
<thead>
<tr>
<th>Evaluation variables</th>
<th>Unit/ kg product</th>
<th>TEGO® Airex 900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abiotic Depletion elements</td>
<td>kg Sb Equiv.</td>
<td>87,67 x 10^-6</td>
</tr>
<tr>
<td>Abiotic Depletion fossil</td>
<td>MJ</td>
<td>92,57</td>
</tr>
<tr>
<td>Acidification Potential</td>
<td>kg SO₂ Equiv.</td>
<td>13,17 x 10^-3</td>
</tr>
<tr>
<td>Eutrophication Potential</td>
<td>kg Phosphate Equiv.</td>
<td>1,87 x 10^-3</td>
</tr>
<tr>
<td>Global Warming Potential</td>
<td>kg CO₂ Equiv.</td>
<td>4,68</td>
</tr>
<tr>
<td>Ozone Layer Depletion Potential</td>
<td>kg R11 Equiv.</td>
<td>1,91 x 10^-6</td>
</tr>
<tr>
<td>Photochem. Ozone Creation Potential</td>
<td>kg Ethene Equiv.</td>
<td>1,32 x 10^-3</td>
</tr>
<tr>
<td>Primary Energy Demand</td>
<td>MJ</td>
<td>105,7</td>
</tr>
</tbody>
</table>

**Contact**

Evonik Industries AG  
Coating Additives  
Goldschmidtstraße 100  
45127 Essen  
Germany  
Phone +49 201 173–2222

This LCA-estimation was performed by the LCM Group of Evonik Industries AG.

---

**Trademark notice and legal notice**  
® = registered trademark  
This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

Evonik Industries AG  
Coating Additives  
45127 Essen, Germany  
Phone +49 201 173–2222  

www.tego.de  
www.evonic.com