

**Project: Baypure**

**Subject: Baypure® Product Line**

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### (2003) Baypure®: Eco-effective Chemistry

The Baypure® line of commercial chemicals was developed to have high environmental performance while matching or exceeding the performance of conventional chemicals. It consists of chemicals used in industrial processes that were designed to have improved biodegradability, good ecotoxicological characteristics, and to use production processes with closed-loop material flows. A closed-loop material flow contrasts a common linear material flow pattern, where raw materials travel from the environment to the manufacturer to the consumer and finally to the landfill. The Baypure® line mainly includes two chemicals: Baypure® DS100 and Baypure® CX100. Baypure® DS100 is a dispersing agent and Baypure CX100 is a complexing agent. Dispersing agents help dissolve solids in liquids and are used, for example, to disperse solid pigments into liquids during the manufacture of chemical dyes. A complexing agent binds to metals in a liquid solution and behaves similarly to a sponge soaking up water. They are used, for example, in detergents and paper production.

EPEA Internationale Umweltforschung GmbH compared the environmental performance of the two Baypure® chemicals DS100 and CX100 with their conventional counterparts. The conventional counterpart of Baypure® CX100, for example, is EDTA. EDTA is a commonly used complexing agent; it degrades very slowly in the natural environment and is problematic for aquatic toxicity. EPEA compared each Baypure® chemical to its conventional counterpart along the entire lifecycle of the chemicals from raw material procurement to production processes to their fate in the natural environment after use. EPEA employed their Index of Eco-effectiveness™ to perform this assessment. The concept of “eco-effectiveness” stands in contrast to the concept of eco-efficiency. Whereas the strategies of eco-efficiency are characterized by reducing resource use (hence “efficiency”), eco-effectiveness is concerned with increasing cyclical material flows (hence “effectiveness”). Another way to state the concept of eco-effectiveness is: “Waste equals food.” EPEA’s Index of Eco-effectiveness™ measures the performance of products with respect to their production processes and material flows. The central issue is the capacity to maintain the quality of materials and to sustain the natural environment. EPEA found that the Baypure® line of chemicals excelled in their behavior in the environment after use compared to their common counterparts. Because they are non-toxic and biodegradable, they are compatible with the natural environment.

### Baypure

<http://www.baypure.com>

### EPEA Internationale Umweltforschung GmbH

<http://www.epea.com>