

OSMOSIS

One Step Modification of Space-Integrated Systems

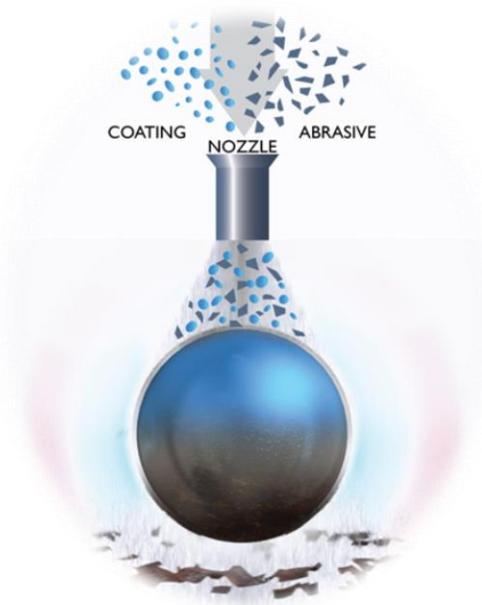


AN INDUSTRY WIDE PROBLEM

Metal adhesive bonding is a critical process for fabricating satellites and it relies heavily on toxic metal priming, wet chemistry processes. Environmental legislation (REACH) will prevent the use of the standard chromate procedures and potential replacements based on a wet-chemistry approach tied to hazardous chemicals.

- ❖ Chromate or its hexavalent chromium form used in coatings, is a **toxic substance**.
- ❖ These chemicals can be carcinogenic, especially when airborne and require expensive processes and strict regulations for pollution prevention.

COBLAST SOLUTION



With the OSMOSIS project, ENBIO aims to eliminate these harmful wet chemical processes and replace it with a clean, one-step surface modification process, CoBlast, as a new surface adhesion primer solution. Within 2 years ENBIO will bring a viable chromate-free adhesive primer to the European space sector market.

CoBlast is a one-step, ambient temperature, ambient pressure process that uses conventional grit/micro-blasting equipment to remove a metal's natural oxide layer and replace it with a desired functional Skin.

Abrasive and coating powders are simultaneously blasted onto the metal surface from a single nozzle. The abrasive mechanically abrades the substrate, exposing active chemical bond to which the coating particles bond before an oxide layer can reform.

The process forms a coating with excellent coverage, with little or no abrasive remaining on the surface or embedded in the substrate. The level of coating/substrate integration achieved by this process is far beyond most coating methods and leads to some unique capabilities.

- ❖ Excellent performance in adhesion
- ❖ Green, environmentally friendly
- ❖ Flexible and resistant to delamination
- ❖ One step, uncomplicated process
- ❖ Surface details are preserved