

MATERIALS AND STRUCTURES SYMPOSIUM (C2)  
Space Vehicles – Mechanical/Thermal/Fluidic Systems (7)

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EUROPEAN REACH LEGISLATION: IMPACT ON EUROPEAN LAUNCHERS AND CURRENT  
ACTIVITIES ON NEW SUSTAINABLE TECHNOLOGIES

**Abstract**

In the recent years, Europe has increased its effort to better protect European citizens and its natural environment. With the REACH directive (Registration, Evaluation, Authorization and Restriction of Chemicals) the European Union has put into force one of the most ambitious and strictest environmental regulations to date. Through this regulation also the European Chemicals Agency was established which manages the technical, scientific and administrative aspects of REACH. The candidate list is the baseline tool to identify substances as Substances of Very High Concern (SVHC). By 2020 it is expected to contain all relevant currently known SVHCs, i.e. several hundred substances. Today, about 9The immediate impact to space programmes is the potential obsolescence of material, processes and technologies used by manufacturers. A high-risk example is the case of hexavalent chromium, used in many elements of spacecraft and launchers for corrosion protection of aluminium alloys. In the particular case of launchers programmes, this impact of REACH is strategically of high risk as supply chain disruptions for launcher production could jeopardize the autonomous access to space for Europe.

However, consequences of these regulations also create business opportunities in Europe to innovate in new sustainable technologies.

The paper will present the main principles of the REACH process and the impact on space programmes, focusing on launcher programmes. It will further elaborate on the strategy of the European Space Agency to cope with these regulations and the European-wide coordination between industry and space agencies, managed through the joint European Materials Processes Technology Board. A summary of activities in Europe to work on alternatives will be presented as well as current activities on new sustainable technologies.