# Total Materia for Automotive

Optimizing CAE and Design activities through fingertip access to the world's most comprehensive material properties resource.

Key to Metals AG is the developer of Total Materia, the world's most comprehensive materials database including the standard Total Materia data set of linear material properties and also our unique collection of advanced property data which provides stress-strain curves, formability diagrams, fatigue data, and more for thousands of materials and is designed to save time and money through intelligent search methods and enhance the depth and quality of information required for CAE and FEA analysis.
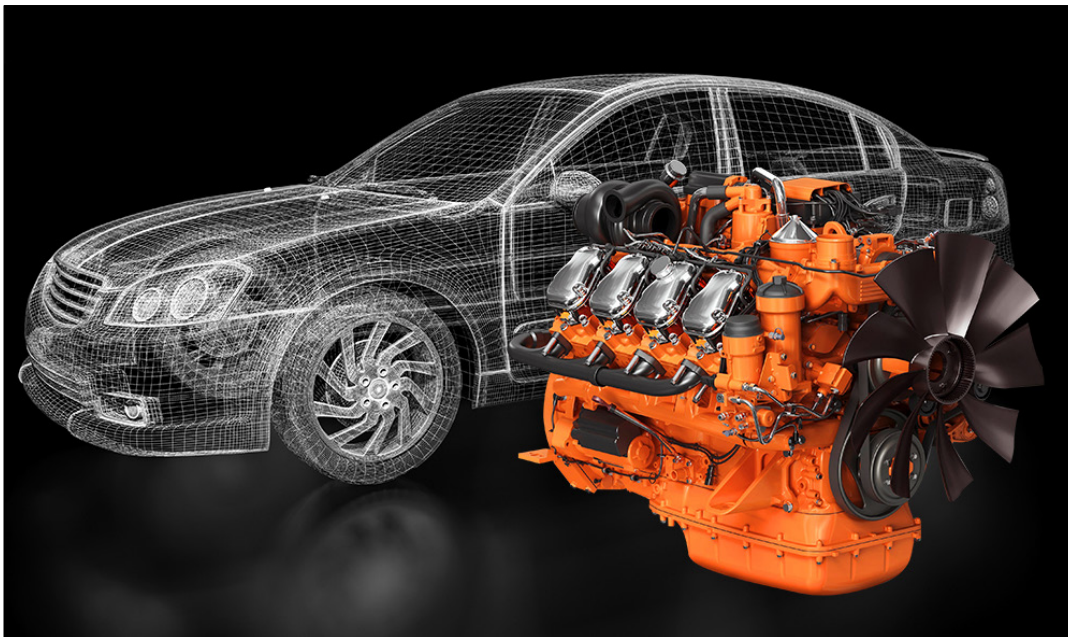
"The Total Materia database is a very important tool for our engineers and technical activities as a whole.

I would therefore like to thank you for your service and making the database available for the market."

Dr. Ricardo Testi
Piaggio Ltd.

Solution Highlights

Total Materia is used as a common platform in the automotive industry by efficiently and accurately minimizing time spent on searching for material properties and ensuring accuracy and consistency throughout the entire workflow. From design and CAE , powertrain engineering, general manufacturing, to testing and validation, Total Materia has comprehensive application.

Total Metals	*The World's Most Comprehensive Metals Database*
PolyPLUS	*Property data for thousands of non-metallic materials*
Extended Range	*Unparalleled advanced material properties resource*
eXporter	*Export properties simply to Radioss and OptiStruct formats*
Suppliers	*Metal supplier sourcing directory and search engine*

Product Specification

- Properties for more than 280,000 materials including metallic and non-metallic used readily in the automotive industry

- Cross-reference tables containing over 15M connections between global material specifications driving a common language between HQ and R&D/Manufacturing centers worldwide.

- Experimental non-linear data such as high strain, stress-strain curves for crash simulations.

- Exporting of critical information into formats suitable for direct CAE software use.
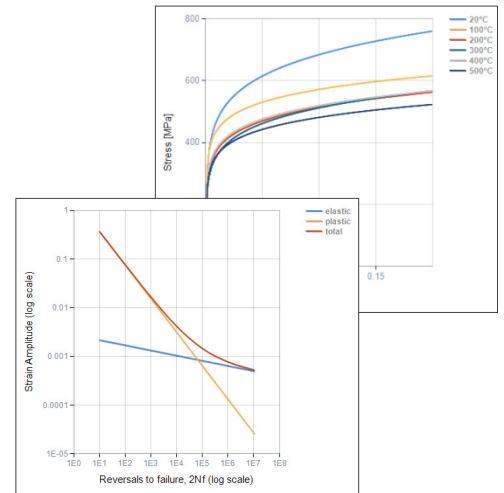
Use Case: Quality and Material Analysis

- Analysis labs responsible for investigating non-conforming products, failure analysis, competition related reverse engineering need access to cross-references, properties and comparison tools.

- Specific investigations in analysis include investigations into chemical analysis, mechanical and physical property related failures.

- Comparing chemical analysis results from spectrometers against >220,000 global metals to control supplier specifications and find equivalent materials and possible replacements.

- Verification of tensile and fatigues testing to assess material quality and compare against standard specification material properties in Extended Range.

- Comparing materials and properties to make informed proposals for material replacement and to update internal specifications.

NON-CONFORMING

Lab Responsible (Reviewing Testing Results)

Mechanical & Physical Testing

Chemical Analysis

Smarter Engineering Decisions