Save time, reduce risk, and increase service life with a single, reliable, easy-to-use source of corporate materials data

Make informed materials selection decisions based on performance requirements and operating conditions

Integrate access to in-house test, QA, and design data with trusted industry reference data and Standards

Empower your materials scientists & engineers by dramatically improving the capture, analysis, and deployment of critical data

Support ‘Fitness for Service’ testing

Materials knowledge is crucial for high performance application in the oil, gas, and Plant & Process industries. Materials must meet requirements on fatigue, creep, wear, fracture toughness, and corrosion resistance over many years—often under extreme service conditions. Materials engineers and designers need access to the right information, and need to be able to apply it effectively to make the best possible materials and process choices. But it can be difficult to manage in-house test and QA data efficiently, and to retain and re-use materials knowledge, particularly when projects may run for decades. Yet such information management is vital—both to ensure ‘traceability’ of design decisions for regulatory purposes and to enable the best results in maintenance and new design. **Granta can help.**

### Example Solutions for Oil, Gas, and Plant & Process

**GRANTA MI™ for materials data management**

Materials-related data can be critical. You need to capture and retain data on mechanical performance, corrosion behavior, fluid compatibility—all of which depend on complex factors like temperature, salinity, and pressure. Your customers have demanding requirements and you cannot afford to deliver sub-optimal products or keep them waiting for answers. You need a way for your engineers to have the right information at their fingertips, and a way to make better decisions right first time.

Granta works with leading industrial partners (overleaf) to develop a best-practice approach to these challenges, embodied in the GRANTA MI software system.

**Reliability and Maintenance**

When equipment needs maintenance or repair, time is critical. But all too often the materials or welding consumables specified in the original designs are withdrawn or no longer available, and identifying a substitute can be a daunting process.

Granta’s solution combines reference data (see overleaf)—including tens of thousands of current and withdrawn alloys from dozens of Standards Bodies, and around 30,000 welding consumable products—with powerful tools for substitution and equivalence, so that reliable, sourceable alternatives can be quickly identified.

You may also be involved with procedures such as those described in the API 579 / ASME FFS “Fitness for Service” Standard, which specifies assessment techniques to demonstrate structural integrity of flawed in-service parts. These techniques require significant levels of organizational discipline—gathering test data, sharing & analyzing results, and ensuring that knowledge is captured and re-used rather than lost. Granta provides best practice templates and a powerful software framework to manage the underlying information needed for such service life extension initiatives.

**Example customers:**

- Baker Hughes
- Sulzer
- Emerson
- Material Technology Institute
- Air Liquide

---

**Comparing various API material specs for an oil & gas application using the MI-21 metals database.**
Granta provides easy, cost-effective access to quality reference data on metals, alloys, elastomers, & other typical industry materials. Examples include: the complete list of European steel standards; property data for alloys specified by dozens of Standards Bodies including ASTM, AISI, ASME, and API; over 70,000 polymer datasheets; the NIMS creep and fatigue data (resulting from over 40 years of longevity testing at Japan's National Institute of Materials Science); and the ASME Boiler and Pressure Vessel Code Part II-D, Materials, the leading source of standards information and specifications relating to materials for use in boilers, pressure vessels, and power plant components.

- Rapidly search, manipulate, and apply authoritative data in analysis and design.
- Locate materials that have desired properties (or combinations of properties) rather than simply look up known materials.
- Identify withdrawn grades and specifications, and find available substitutes.
- Compare materials quickly and easily: select the right material for your application.
- Export data directly to computer aided engineering and design packages.
- Ensure that all of your engineers see the same, up-to-date, version of the data.

Granta Consortia
Granta’s software tools and reference data are developed with input from three collaborative projects, each founded with industrial partners and focused on developing and applying software for specific application areas.

The Material Data Management Consortium is a unique collaborative project focused on developing and applying software to manage mission-critical materials data in the aerospace, defense, and energy sectors.

The Materials Strategy Software Consortium is a collaborative project which defines and applies new software to manage materials data and apply it to the challenges of material selection, substitution, and cost optimization.

The Environmental Materials Information Technology Consortium develops and applies materials information technology solutions to assist design around environmental constraints.

Further information
We can help with almost any problem relating to materials information. In addition to the tools described here, our CES Selector software is a unique tool for materials and process selection and substitution.

For complete information on Granta’s solutions for this industry see:

www.grantadesign.com/solutions/oil/