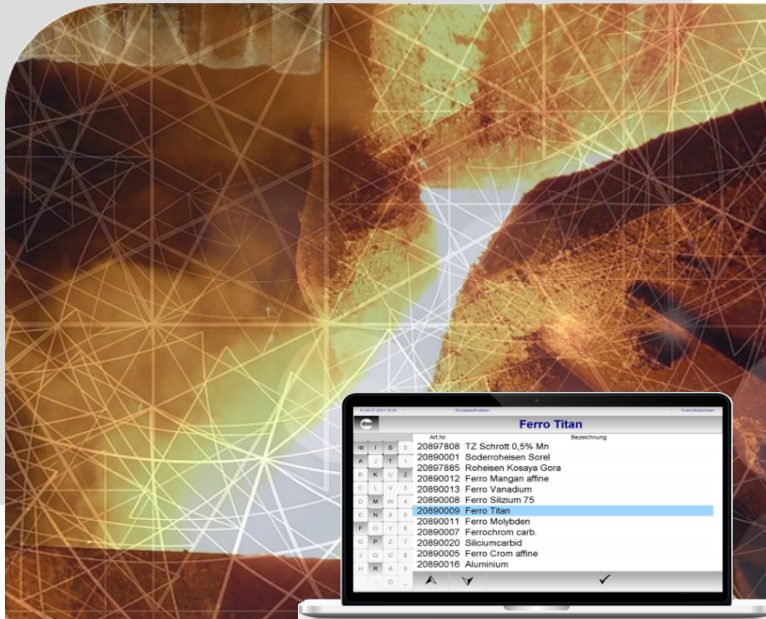


# RGU Expert - Melting Guide



## The benefits

The success of foundry is more and more based on the digitalization of its processes. The optimal usage of material and resources in the area of your melting department and in the overall melting process is especially crucial due to high energy and raw material costs. The right digitalization supports you in improving your energy and material consumption reduction. **Melting Guide**, your melting guide by **RGU Expert**, improves your productivity and makes all previously opaque transactions transparent.

**Melting Guide** was developed with a full integration of your work environment and processes in mind.

Freely configurable charge composition along the process, inclusion of multiple furnaces, usage of data from scales, spectrometer or temperature measuring devices is integrated into **Melting Guide**, if applicable. **Melting Guide** is made with emergency plans, if the automatic capturing of production data is interrupted due to unforeseen circumstances. All operations can also be configured to be operated completely manually.

In the standard version of the system, **Melting Guide** is fully integrated in the ERP system **structura** by **RGU Expert**. Still, all features of **Melting Guide** can be used alone or in connection with your pre-existing management system. Quality and consumption data can be exported as data records.

**Melting Guide** comes with pre-defined analysis and report functions to ensure your maximum benefit right after usage. All reports and analysis can be adjusted and expanded to your needs.



## The basics

Meeting customer demands in the form of quality standards for each casting is the fundamental principal for a successful relationship. And the technological and technical guidance of your heat, melting and treatment processes are key. The digitalization of these processes enables you for optimization and allows you to categorize and avoid malpractices.

The digitalization of your melting area fulfills all requirements of compliance in the case of customer complaints and escalation.

The RGU Expert **Melting Guide** allows you to have immediate access to all relevant data, quick and easy. All data is collected during the on-going melting process and all required tasks at hand. No more cumbersome entering of data after the actual melting process is already finished. Loss of data is therefore non-existent.

The daily operation with **Melting Guide** is mostly done automatically in the background and only requires minimal interaction for event management control. All features are designed to let your employees do the work they are supposed to do.

The RGU Expert **Melting Guide** has been developed by experts from the IT and foundry industry. Sophisticated formulas support the melting process by calculating key data like liquidus or holding temperature automatically based on the actual chemical composition of the heat. Using the thermal analysis method, regarding the carbon content, those calculations become even more accurate.

### Casting material

Defines all casting standards in production and can be allocated to material groups and charge make-ups. Each casting material and its composition can be freely defined along the melting process whether it is currently in the furnace or the casting ladle.

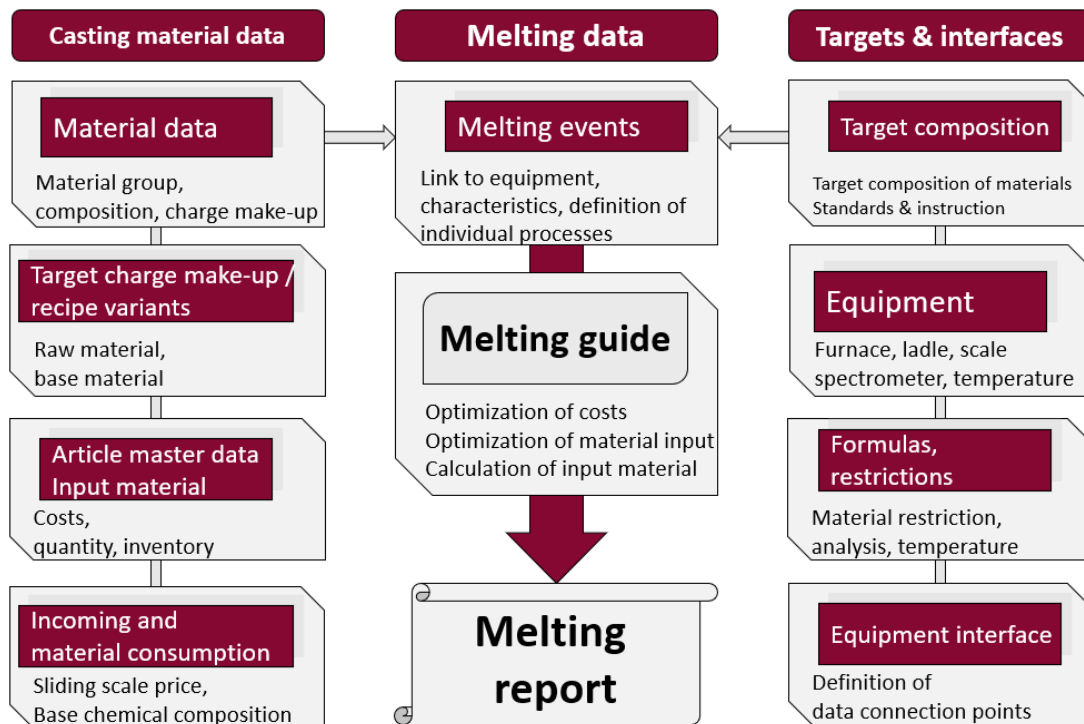
### Charge make-up

Target charge make-up plans and recipe variations of the planned usage of input material. All recipe variations are automatically calculated with their costs upon entering. Optimization features allow for the optimal usage of material depending on costs and availability.

### Chemical composition

Each input material has its own chemical composition entered. The chemical composition für the target charge make-up as well as the actual input are calculated automatically.

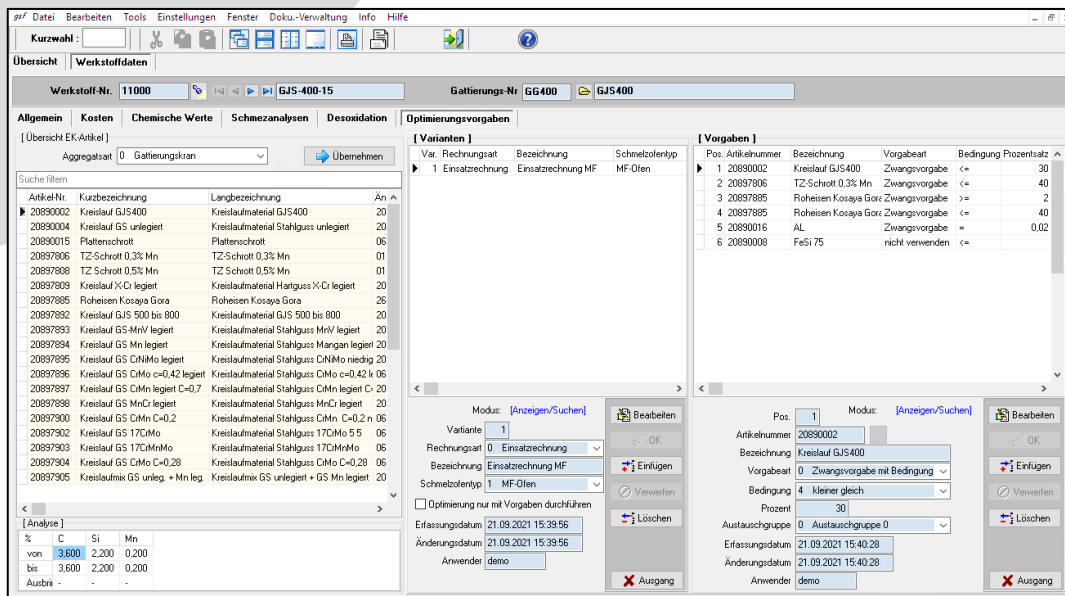
<b>Material stock</b>	All used materials are placed in specific, virtual inventories and are allocated to their destined place of usage, which could be in the material bunker, near the furnace or the place where metallurgical treatment is done.
<b>Material management</b>	Material stock level is determined by ingress and withdrawal. All material withdrawal is automatically done in the background, based on the actual needed and weighted material. Stock taking management included.
<b>Machine data connection</b>	All usually used equipment in your melting department can be connected via connection to data bases or interfaces. Usage of data from furnaces, scales, spectrometer data and more can be allocated to your casting batch with a simple push of a button. A fail-safe mechanism allows continuous working even if connection to the equipment is interrupted.
<b>ERP system</b>	<i>Melting Guide</i> can be used under various pre-existing data systems, just using the information you already have. Data can be transferred via interfaces or one-time data import. Material consumption data is available as data records.



## The program

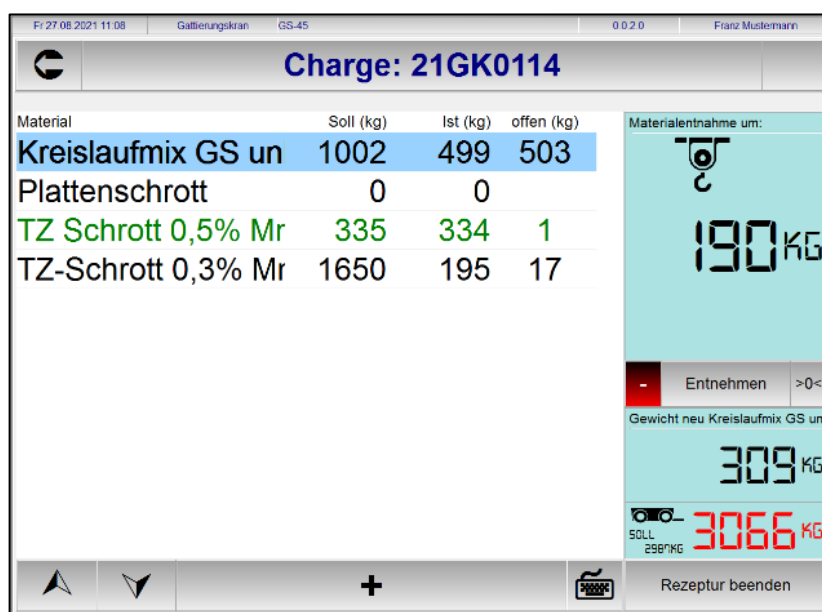
### Specific casting material data

All specific material data for your melting process is available in the system. Target charge make-up and recipe variants, different target analysis types for charges, furnaces or ladles. Special parameter for material used for deoxidation. Optimization parameters for charge make-up.



All tasks can be distributed along the various steps in the melting department. All data can be captured directly from machines or, when necessary, manually by your employees. All data along the complete process is available, ranging from the charge make-up crane, the spectrometer connection to the last temperature measurement at pouring.

### Process data



## Purchase material

The integrated purchase article management allows the overview of all used types of raw material and additives. Specific inventory locations depending on the location where the material is used can be entered. Including full cost management.

The screenshot shows the 'Article master data' window in RGU Expert. The 'General' tab is selected, displaying fields for Article (20890012), FeMn aff., and Ferro Mangan affine. The 'Status' is 0, and the 'Inquiry article' is selected. The 'Prices / costs' section shows 'Last price' as 0.00 EUR and 'Costing for casting' as 1.620 EUR. The 'Slidingscale price' is also 0.00 EUR. The 'Pool of costs - Costing' is 0.00 EUR. The 'Status' is 0.

Material usage and consumption can be managed via connected crane or manual scales. The material withdrawal can be exported as a data record to the existing ERP system.

## Stock management

The screenshot shows the 'Inventory withdrawal' window in RGU Expert. The 'Document no.' is V14-000166, and the 'Status' is 0 - Not booked. The 'Mode' is Browse. The 'Date' is 22.09.2021, and the 'Withdraw type' is 0 - Purchase article. The 'Inventory' is 01, and the 'Inventory designation' is Gattierung. The 'Table' shows the following data:

Item no.	Article no.	Article designation	Quantity	Unit	Expense account
1	20897805	Kreislauf X-Cr legiert	200,000	< Kg > Kik	

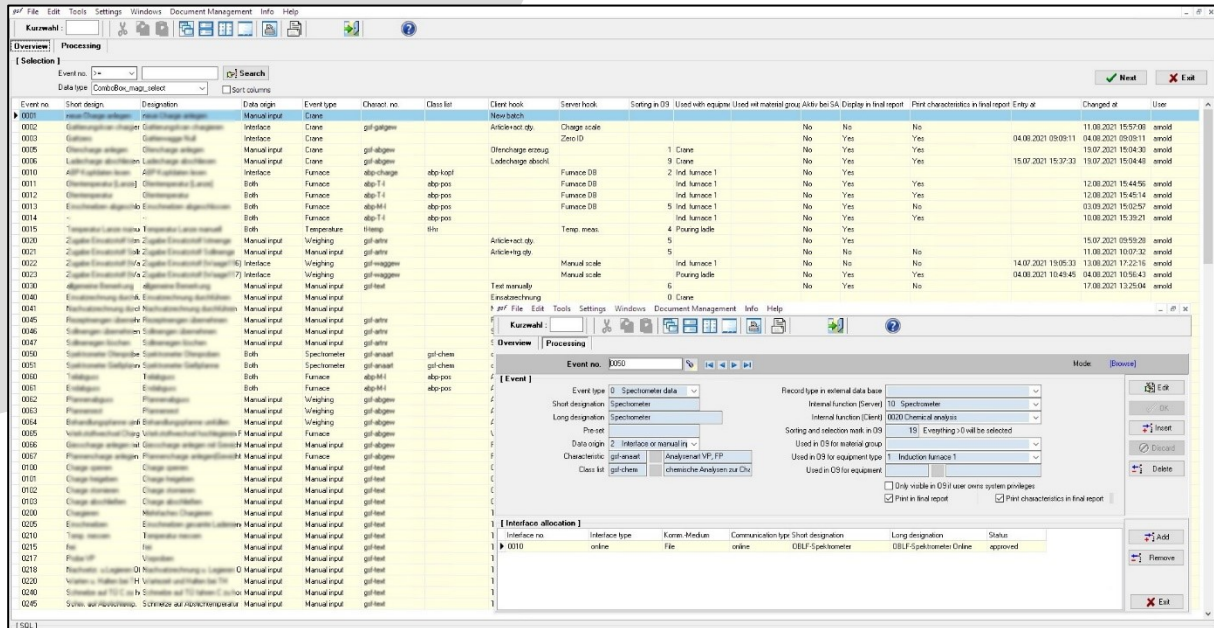
The 'Edit mode' section shows the following data:

Item	1
Article no.	20897805
Designation	Kreislauf X-Cr legiert
Quantity	200,000 < Kg >
Stock	0.000 < Kg >
Expense account	
Purchase account	
Cost centre	
Value	0.00
Delivered batch	21GK0187
Status	0 - Not booked



## Events

Events are the trigger for all actions and data capturing of the RGU expert Melting guide. Events start machine data capturing to a specified time to always have the current and correct data available. Events can be made fail-safe to avoid data loss in the case connection to the machine data bases is lost.



The central melting guide program is used to create new batches, capture machine data, addition of material and additives, allocate spectrometer data. A final melting report is created upon closing the casting batch.

## Melting guide

