

ROVALMA

THE STEEL INNOVATOR



FECRONI[®]-1400

Premium Stainless Steel with Outstanding
Corrosion Resistance and High Strength

FECRONI[®]-1400

Fecroni[®]-1400 is a martensitic stainless steel, which combines high mechanical resistance, hardness and toughness with a very high corrosion resistance. It has good machinability and it is usually delivered in a pre-hardened condition at a typical hardness of 42 - 44 HRC, or ready for precipitation hardening, offering great opportunities to reduce the manufacturing costs and lead times.

Applications

Typical application areas of Fecroni[®]-1400 are: fabrication of turbine blades and valves for the chemical, petrochemical and gas industries; moulds and inserts of PVC reducing maintenance, PVC extrusion and blowing moulds; equipment for the food and paper processing industries, axles and turbines for pumps; caps, axes, gears, screws, nuts and rivets that work in aggressive environments, as well as surgical devices, blades, springs and tail shafts for watercraft, or in accessories for nuclear and aerospace industries.

Physical and Mechanical Properties

Properties	293 K	Unit
Density	7.806	$\times 10^3 \text{ kg/m}^3$
	0.282	Lb/in ³
Elastic Modulus	197	$\times 10^3 \text{ MPa}$
	28.6	$\times 10^3 \text{ ksi}$
V-Notched Charpy Resilience	14	J
	10.3	ft.lb

The values given in the table are typical values (neither maximum nor minimum values), at a hardness level of 44 HRC.

Thermal Properties

Properties	300 K	473 K	Unit
Linear Thermal Expansion Coefficient		10.95	$\times 10^{-6}/\text{K}$
Thermal Conductivity	15.3	19	W/m·K
Specific Heat Capacity	0.46		J/g·K

The values given in the table are typical values (neither maximum nor minimum values), at a hardness level of 44 HRC. Thermal conductivity values are calculated on the basis of thermal diffusivity values measured by laser flash.

Polishability

- Very high levels of polishability can be obtained, observing best practice rules for polishing of stainless steels.
- Fecroni®-1400 is being used for example in the plastic industry, for applications in which high gloss finish surfaces are required, or in other applications, where mirror polish and superior levels of polishability are required.
- It is very important to keep best possible cleanliness during the polishing operation.
- Build-up of high surface temperatures during polishing should be avoided by adjusting the polishing speed.

Heat Treatment

Fecroni®-1400 is supplied in pre-hardened condition with a typical hardness level of 42 – 44 HRc, or in ready for precipitation hardening state.

For pre-hardened material, in case of electrical-discharge-machining (EDM) or after welding, an additional heat treatment is recommendable.

In order to achieve maximal mechanical and corrosion resistance, the following heat treatment is recommended:

- Heat to 480 °C
- Hold for 1 hour
- Cool in air

Expected final hardness: 42 - 44 HRc.

For further detailed information, please contact Rovalma S.A. technical department.

Surface Treatments

Surface treatments such as nitriding to increase friction or wear resistance can be applied, however the process temperature should not exceed 480 °C and may reduce the corrosion resistance.

For further detailed information, please contact Rovalma S.A.'s technical department.

Welding

Fecroni®-1400 can be welded by the typically used methods, although the most satisfactory results in fusion welding are achieved with TIG or MIG using Fecroni®-1400 as filling material, and followed by a precipitation hardening. Coated electrodes are available for its correct welding.

For further detailed information, please contact Rovalma S.A.'s technical department.

Designer & Provider of First-Class Tool Materials

ROVALMA, S.A. provides innovation in tool materials. Thanks to comprehensive research, innovative design and development, most recent production techniques as well as in depth quality control, we have achieved significant advances in the knowledge about material forming processes and generated important know-how regarding the production and optimal usage of our materials for a specific application. As a result, we can provide you with **first-class tool steels** for cold and hot work material forming processes and outstanding technical assistance.

We are proud to make our High Performance Tool Steels available to you for your specific applications. Do not hesitate to contact us for the latest information.

Application Engineering Service

In order to fully exploit the advantages and the potentials of ROVALMA's High Performance Tool Steels, we offer our customers the support of our Application Engineering Service. Our highly qualified and dedicated engineers can assist you in selecting the optimized grade for your application and provide you with the corresponding technical recommendations. It is our mission to increase the competitive-advantage of our customers and support them in achieving the highest possible cost-effectiveness.

You can access our service directly by sending an email to: ae-fast@rovalma.com.



ROVALMA, S.A. carries out ongoing research for many applications regarding the usage of the materials here presented. This research often brings along significant advances in the knowledge of a given process and thus important information regarding the best possible usage of the materials for a specific application. We strongly recommend to get in contact with ROVALMA, S.A. for the latest information regarding a specific application.

Rovalma S.A.
HT
C/ Apol·lo, 51
08228 Terrassa (Barcelona)
SPAIN
Tel. (+34) 935 862 949
Fax (+34) 935 881 860

Rovalma S.A.
Head Office
C/ Collita, 1-3
08191 Rubí (Barcelona)
SPAIN
Tel. (+34) 935 862 949
Fax (+34) 935 881 860

Rovalma GmbH
German Office
Geibelstraße 5
12205 Berlin
GERMANY
Tel. +49 (0)30 810 59 717
Fax +49 (0)30 810 59 715

www.rovalma.com

© ROVALMA, S.A. 2017. All rights reserved. This brochure may not be, entirely or partially, reproduced, copied, distributed or modified, without the explicit authorization by ROVALMA, S.A. In particular, it is prohibited to alter the contents and/or use, any information provided herein, out of context. **NOTICE:** All information provided herein is for general information purposes only. The optimal choice of a tool steel depends on many factors, including, but not limited to individual process parameters, allowable tolerances and other production process factors, work conditions and preferences. **DISCLAIMER:** All information provided in this datasheet is provided "AS IS" and "As available" and without warranty, express or implied, of any kind regarding completeness, faultlessness, accuracy, up-to-dateness, individual interpretations, merchantability or fitness for any purpose and no representation contained in this datasheet shall be binding upon ROVALMA, S.A. All information shall be provided and accepted at Reader's / Receiver's risk.