GTCS®

Low Thermal Conductivity Tool Materials

GTCS® steels feature very low thermal conductivity at comparable levels of ceramic isolation materials, combined with the mechanical properties of steels. GTCS® are typically used in hot forming applications in order to reduce cooling in certain tool areas through reduced heat extraction by GTCS®, or to produce tool segments with graduated properties. The working hardness range after application of the proper heat treatment for GTCS®-450 is typically 38-40 HRc achieving higher toughness levels than GTCS®-470, which can be hardened up to 50 HRc.

Applications

The GTCS® grades are typically used in hot forming applications in order to reduce cooling in certain areas so as to produce tool segments with graduated properties.

Thermal Properties GTCS®-450

Properties	25 °C	200 °C	400 °C	600 °C	Unit
Thermal Diffusivity	2.98	3.57	3.91	4.31	mm^2/s

The values provided in the table are typical values (neither maximum nor minimum values), for properly heat treated materials at a hardness level of 38-40 HRc.

Thermal Properties GTCS®-470

Properties	25 °C	200 °C	400 °C	600 °C	Unit
Thermal Diffusivity	2.86	3.18	3.44	3.64	mm^2/s

The values provided in the table are typical values (neither maximum nor minimum values), for properly heat treated materials at a hardness level of 50 HRc.

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. You can directly contact our Application Engineering Department writing to the following e-mail: ae-fast@rovalma.com

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