# MHC insert



**Information about the content**

| | | | |
|---|---|---|---|
| **Responsible area:** | Plansee SE | **Prepared/Updated:** | See SAP-DMS |
| | | **Released:** | See SAP-DMS |
| **Valid from:** | 01-Aug-2017 | **Controlled:** | QM |

This document is subject to electronic version control – confirm revision status before using.

***This specification covers MHC inserts in the diameter range of 25 - 280 mm and thickness range of 6 - 115 mm. MHC inserts are used especially for deforming processes of non-ferrous metal alloys.***

## 1 Dimensions and tolerances

### 1.1 Diameter and guaranteed product tolerances

| Diameter | | Thickness | |
|---|---|---|---|
| **Nominal size [mm]** | **Tolerance [mm]** | **Nominal size [mm]** | **Tolerance [mm]** |
| 25 - 70 | ± 0,05 | 6,0 - 70 | ± 0,05 |
| 71 - 100 | ± 0,10 | 71 - 100 | ± 0,10 |
| 101 - 120 | ± 0,30 | 101 - 115 | ± 0,30 |
| 121 - 280 | ± 0,50 | | |

Other dimensions and tolerances on request.

## 2 Physical and mechanical product properties

| | |
|---|---|
| **Density** | ≥ 10,10 [g/cm³] |
| **Hardness** a) | ≥ 280 [HV10] |

a) The actual value quoted in certificates corresponds to the mean-value of a representative control sample.

**Nondestructive Testing:** Visual inspection

### 2.1 Surface condition

**Surface:** Mechanical machined, sharp etches removed, Ra max. 3,20 µm

## 3 Chemical composition

| Main and minor components | Plansee Min. content | | EU-Directive RoHS [a] |
|---|---|---|---|
| **Mo** | **Balance** | | - |
| **C** | **500 – 1200 µg/g** | | - |
| **Hf** | **1,00 – 1,30 %** | | - |
| **Impurities** | **Max. values [µg/g]** | | **Max. values [µg/g]** |
| | **Typical** | **Guaranteed** | |
| Al | 1 | **10** | - |
| Cr | 3 | **20** | - |
| Cu | 2 | **20** | - |
| Fe | 5 | **20** | - |
| K | 6 | **20** | - |
| Ni | 1 | **10** | - |
| Si | 2 | **20** | - |
| W | 169 | **300** | - |
| H | - | **10** | - |
| N | 5 | **10** | - |
| O | - | **600** | - |
| Cd | 1 | **5** | 100 |
| Hg [b] | - | **1** | 1000 |
| Pb | - | **5** | 1000 |
| Cr (VI) | | | 1000 |
| Organic impurities (e.g. PBB, PBDE, PFOS, PFOA) | - **) | - **) | 1000 |

a) EU-directives 2015/863/EU, 2011/65/EU and 2000/53/EC

b) Initial value

**) The presence of Cr (VI) and organic impurities can definitely be excluded because of the production process (multiple heat treatments at temperatures above 1000 °C in $H_2$-atmosphere).

The chemical composition is checked by means of random sampling. The sampling inspection plan, analysis and evaluation methods are determined in the internal instruction PSE-020-WI-003. The application of the measured values for the chemical analysis is defined in PSE-680-WI-001.

***Remarks:*** The specified physical and chemical characteristics are disclosed not regarding measurement accuracy.

# 4 Packaging, labelling, storage and certification

## 4.1 Packaging, labelling and storage

***Standard individual packing:*** wooden case

*Each package will be provided with a label with the following information:*

| | |
|---|---|
| **Producer's name:** | Plansee |
| **Plansee order number:** | |
| **Lot number:** | |
| **Material number:** | |
| **Material:** | MHC |
| **Dimension:** | Diameter, thickness |
| **Surface:** | |
| **Quantity:** | Total quantity in pieces and/or kg |
| **Date:** | |

The material must be kept in a dry place and protected from mechanical damage. It is best to keep the material in the original packing until used.

***Special packing:*** (extra costs will be invoiced) On request each single insert is packed in PE-bag with desiccant.

Special packing should be used if the material is stored under unusual conditions or aggressive atmosphere (e.g. sea air, …).

## 4.2 Inspection documents

Following inspection documents will be supplied upon customer request according to EN 10 204:

***Test report 2.2***

Plansee confirms with this test report that the delivered product meets the specification and gives details of the material properties according to ongoing production surveillance, not directly related to the particular production batch.

***Inspection certificate 3.1*** (extra costs will be invoiced)

An inspection officer from Plansee confirms with this inspection certificate that the delivered product meets the specification and gives test results related to the particular production batch.

# 5 Order instructions

Please quote following information when ordering:

- Product description
- Quality (the number of this specification must be mentioned)
- Dimensions: Diameter and thickness
- Quantity in pieces or kg
- Required certificate and content in case of a 3.1 inspection certificate
- *For special packing:* Specification of packaging

For further information on our delivery possibilities. please look into our http://www.plansee.com

# 6 Referenced standards

The standards applied for the test methods are listed in the Plansee standard InfoBase and are made available upon request.

## Changes to last version

| Replacement for | Changes to last version |
|---|---|
| PS-IHR-168 | ▪ New Document numbering key<br>▪ New Document layout<br>▪ Section 2: description text in view of hardness specification added<br>▪ Section 2: Ultrasonic test removed<br>▪ Section 3: RoHS Directive appellation updated<br>▪ Section 3: HfO2 -content removed<br>▪ Section 4.2: Description of Test Report / Inspection Certificate eliminated |
| | ▪ Actuality check performed by Manuel Friedl on 06.09.2022. No change in content. |