# 13-8MO

Material Data Sheet

## Material Description

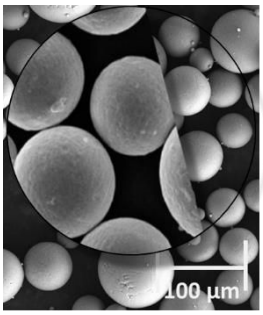
**GMP 13-8MO** metal powders have been specifically designed and optimised for use in Additive Manufacturing (AM).

**GMP 13-8MO** metal has been successfully proven in AM across the broad spectrum technologies.

**GMP 13-8MO** is a martensitic precipitation hardening stainless steel with high strength and hardness along with good levels of resistance to both corrosion and stress-corrosion cracking. **GMP 13-8MO** can be used for valve parts, fittings, cold-headed and machined fasteners, shafts, landing gear parts, pins, lockwashers, aircraft components, nuclear reactor components and petrochemical applications.

## Powder Images

Typical microscopy image of **GMP 13-8MO**




Powders are supplied in a variety of standard and custom sizes.

## Part Example

**Awaiting part image**

## Material Properties

- Excellent corrosion resistance
- High strength
- High hardness
- Good weldability
- Good machinability

## Typical Applications

- Corrosion resistant components
- Valves
- Landing gear parts
- Fittings and fasteners
- Pins

## Relevant Sectors

- Oil & Gas
- Nuclear
- Aerospace
- Automotive

## Powder Properties

| | | | |
|---|---|---|---|
| **item no.** | **GMP 13-8MO -45+15** | | |
| **PSD** | 15-45µm | **Application** | PBF |
| **item no.** | **GMP 13-8MO -53+20** | | |
| **PSD** | 20-53µm | **Application** | PBF |
| **item no.** | **GMP 13-8MO -53+15** | | |
| **PSD** | 15-53µm | **Application** | PBF |
| **item no.** | **GMP 13-8MO -150+45** | | |
| **PSD** | 45-150µm | **Application** | DED |
| **item no.** | **GMP 13-8MO -106+45** | | |
| **PSD** | 45-106µm | **Application** | EBM |
| **item no.** | **GMP 13-8MO -300** | | |
| **PSD** | <300µm | **Application** | HIP |
| **General Properties** | | | |
| **PSD** | d10, d50, d90 reported | | |
| **Apparent Density** | Measured and reported | | |
| **Flow** | Measured and reported | | |

## Chemical Composition

| | |
|---|---|
| **Fe** | **bal.** |
| **Cr** | 12.25 – 13.25 |
| **Ni** | 7.5 – 8.5 |
| **Mn** | ≤0.10 |
| **Si** | ≤0.10 |
| **Mo** | 2.0 – 2.5 |
| **Al** | 0.90 – 1.35 |
| **C** | ≤0.05 |
| **P** | ≤0.01 |
| **N** | ≤0.01 |
| **S** | ≤0.008 |

- wt%

## Industry Powder Names

| | |
|---|---|
| **Generic name** | **13-8Mo** |
| **Generic name** | **1.4534** |

## Atomisation Process

- Vacuum inert gas atomisation
- Anti-Satellite technology
- Argon gas atomised

## Powder Quality

- Highly Spherical
- Very few satellites
- Excellent flowability

## Applicable Specification

- AMS5629
- Other specification: AMS5864, UNS S13800

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## Mechanical Properties*

Awaiting mechanical test data.

## Physical Properties*

| | |
|---|---|
| **Density** | 7.8 g/cm$^3$ |
| **Thermal Conductivity @150°C** | 14.0 W/mK |
| **Melting Point** | 1405°C - 1440°C |
| **Coefficient of thermal expansion** | 10.6 10$^{-6}$ K$^{-1}$ |

*typical data

## Heat Treatment

Information on heat treatment and stress relieving can be provided by our technical experts by contacting: gmp@globusmetalpowders.com

## Contact

Globus Metal Powders is committed to providing our global customers with world-beating customer service through direct support, metallurgy and AM experts, and a family of authorised distribution partners.

Globus Metal Powders offers a diverse range of metal powders and alloys for Additive Manufacturing (AM) and Hot Isostatic Pressing (PM-HIP), along with next generation alloy development maximising the potential benefits and solutions that AM and PM-HIP can deliver.

Our core range of metal powders includes steel, stainless steel, nickel, cobalt and bespoke alloys.

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