



Deposited surface layers on automotive engineering components

1 Purpose

This recommendation combines the papers to be revised: IMDS 008 and IMDS 009. It covers the general requirements for the creation of Material Data Sheets (MDS) of metallized fasteners, e.g. screws, bolts, nuts and washers, up to ISO 898 grade 12.9.

For further engineering components the creation of MDSs is explained describing the respective **base material**, very often steel, and its **metal coatings** plus **subsequent passivation treatment, sealing and lubrication**.

This recommendation does not apply to coated sheet metal products.

2 References

IMDS 001, ISO 898, IMDS 007.

3 Definitions

3.1 Base material

3.1.1 Fasteners

Base material normally is steel without any coating. The IMDS-Committee published a material datasheet describing the composition of the base material for standard parts: **Material for Fasteners Property Class ≤ 12.9**. The MDS ID: 68124 should be used for referencing in all cases where this standard material is used for screws, bolts, nuts and washers.

Important: If the fastener drawing defines a specific material *this* specified product (base material plus surface treatment) must be used for the production of the part.

3.1.2 Further ferrous and non-ferrous metals

Base material is always uncoated metal. Its composition is either defined by an engineering drawing or automobile manufacturer's material specification or supply condition.

The IMDS user will find datasheets on standard materials such as steel, aluminum and magnesium alloys. They are offered by the IMDS Consortium to be adopted by the datasheet creator for referencing and thus speed the setting up of your own material datasheets. For searching standard metals please check under suppliers: "Stahl und Eisen Liste" (Company ID 313), "IMDS-Committee" (Company ID 423), "IMDS-Committee / ILI Metals" (Company ID 18986).

3.2 Coatings, Platings and Films

3.2.1 Metallic Coating Materials

IMDS datasheets describing standard compositions of electrolytically applied metallic coatings are published by the IMDS-Committee and can be found by searching for *e-plate* in the material name.

International Material Data System **Recommendation**

IMDS 008

3.2.2 Chromium Conversion Coating Materials

Automotive industry terminated the usage of products containing yellow chromate surface plating.

Therefore chromate must not be used for new designs. Accordingly the IMDS datasheets of parts of passenger vehicles on chromium-(VI)-containing surface films are historic and must not be used.

In case that the usage of chromium (VI) is still appropriate e.g. spare parts, trucks and motorbikes the coating has to be created separately.

3.2.3 Passivation Coating Materials

Chromium- [Cr(VI)] free passivation is legally compliant and can be used. Trivalent chromium coatings are described in IMDS (under published MDSs) as passivation treatments. Please search for *passivation* to find the IMDS-Committee's published datasheets.

3.2.4 Electroless Plating Materials

Using chemical reactions it is possible to deposit thin metal films on a metal or a polymer substrate. Please search for *electroless*.

3.2.5 Sealant Films

Both inorganic and organic coating materials acting as sealants are described in IMDS (under published MDSs) and can be referenced. Please search *coating film*.

3.3 Lubricants

Lubricants used to obtain constant friction-coefficient characteristics for fasteners can be referenced under the various manufacturers' product datasheets.

3.4 Synonyms

(Electrolytically) deposited coatings / layers / films.

4 Example

In addition to this Recommendation *IMDS Help* is offering useful information demonstrating how to describe various coated (fastener) products. See: Help > Recommendation > *Presentation on IMDS 008*.

5 Acceptance and Release

This Recommendation was accepted and released by the IMDS Steering Committee.



International Material Data System Recommendation	IMDS 008
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6 Release and Revisions

6.1 Release

This Recommendation was initially approved and released Feb., 19th 2003.

6.2 Revision

Rev.	Date	Description/ Reason	Released by
1	Nov.2017	IMDS 008 and IMDS 009 were combined	IMDS Steering Committee