

WILLKOMMEN IM INTERNATIONALEN

MATERIAL DATEN
SYSTEM



Bayerische Motoren Werke AG

DaimlerChrysler AG

Dr. Ing. h.c.F. Porsche AG

EDS

Fiat

Ford Motor Company

General Motors

Mazda

Mitsubishi Motors

Toyota

Volkswagen AG

Volvo Car Corporation

- Öffentliche IMDS-Seiten
- |
- Public IMDS Pages
- |
- IMDS 公式ホームページ
- |
- [Systemzugang]

Electrolytically Coated Components

IMDS international Material Data System

Example: Bracket, e-plated with zinc, black chromate film and sealed

- **Weight calculation of component**
for example, by using the CAD-calculation method or by weighing the component.
- **Weight calculation of the electrolytically precipitated coating**
by calculating the surface area using CAD-data; calculate the weight using the density, thickness and surface area.
- **Weight calculation of the chromate film**
Composition and surface weight of various chromate films are listed in IMDS. This may also be available from the coater.
- **Weight calculation of the sealant**
Composition and density of various types of sealant can be found in IMDS. This may also be available from the coater.

Calculation of the material masses of e-plated products, chromate passivated and sealed

IMDS international Material Data System

Example: Bracket, e-plated with zinc, black chromate film and sealed

- **Mass calculation of the base material** **Result: 1177 g**
for example by using CAD-data or by weighing the uncoated bracket (stripped of zinc)
- This is the total mass of the base material
(E.g. 16MnCr5; listed in IMDS under “Stahl und Eisenliste”)

Search Criteria: Name=16mncr5,Article No.=1.7131,Origin=all,Version=current

Total records found: 1

No.	Name, >Symbol<	Trade name	Mat.-No.	ID / Version	Supplier
1	16MnCr5		1.7131	13891 / 1	Stahl und Eis...

Calculation of the material masses of e-plated products, chromate passivated and sealed

IMDS international Material Data System

Ingredients
16MnCr5 13891 / 1.00

Search View MDS Incred

Expand Collapse Filter

16MnCr5

- carbon
- Chromium
- manganese
- phosphorus
- sulphur
- silicon
- iron

Type	Material (MDS)
ID/Version	13891 / 1.00
MDS Supplier	Stahl und Eisen Liste
Name	16MnCr5 (EN)
Tradename	(EN)
Material No.	1.7131
Symbol	
Classification	highly alloyed
Norms/ Standards	DIN 1652-3 DIN 1654-3
Inhouse Norms	
Supplier	
Remark	Alloy special steels: Structural (EN)

Base material 16MnCr5 is listed in IMDS (supplier: „Stahl und Eisen Liste“)

IMDS international Material Data System

- **Surface area calculation**
for example by using CAD-data **Surface area of the component: 310 cm²**
- **Mass calculation of the e-plated zinc coating**
using the density and component surface area
Surface (310 cm²) x Density (7.1g/cm³) x layer thickness (10µm = 1x10⁻³cm)
Result: Coating as a material
2,2 g “e-plate Zn (electrodeposited zinc coating)”
- **IMDS entry**
The e-plate standard coatings are listed in IMDS

Calculation of the material masses of e-plated products, chromate passivated and sealed

IMDS international Material Data System

Search Criteria: Name=e-plate*,Origin=all,Version=current

Total records found: 31

No.	Name, >Symbol<	Trade name	Mat.-No.	ID / Version	Supplier
1	e-plate Ag (electrodepo..., >Ag<	-	-	757767 / 1	IMDS-Commit...
2	e-plate Ag (Hardsilver) (... , >Ag<	-	-	757803 / 1	IMDS-Commit...
3	e-plate Au (functional) (... , >Au<	-	-	757906 / 1	IMDS-Commit...
4	e-plate Au (Hardgold) (e..., >Au<	-	-	758038 / 1	IMDS-Commit...
5	e-plate Brass (electr..., >Cu/Zn<	-	-	736946 / 2	IMDS-Commit...
6	e-plate Bronze w..., >Cu/Sn/Pb<	-	-	736957 / 2	IMDS-Commit...
7	e-plate Bronze w..., >Cu/Sn/Zn<	-	-	736948 / 2	IMDS-Commit...
8	e-plate Bronze y..., >Cu/Sn/Z...<	-	-	736971 / 2	IMDS-Commit...
9	e-plate Cr (all) (electrod..., >Cr<	-	-	756617 / 1	IMDS-Commit...
10	e-plate Cu (electrodepo..., >Cu<	-	-	736943 / 3	IMDS-Commit...
11	e-plate Eloxal (electrolytical oxi...	-	-	827507 / 1	IMDS-Commit...
12	e-plate Ni (bright) (electr..., >Ni<	-	-	749088 / 1	IMDS-Commit...
13	e-plate Ni (high-sulphur) ..., >Ni<	-	-	756348 / 1	IMDS-Commit...
14	e-plate Ni (microcrack) (e..., >Ni<	-	-	748084 / 1	IMDS-Commit...
15	e-plate Ni (microporous) ..., >Ni<	-	-	748651 / 1	IMDS-Commit...
16	e-plate Ni (semi-bright) (... , >Ni<	-	-	748769 / 1	IMDS-Commit...

E-plated layer entries. Search under „e-plate*“ in the box marked material name. The number of matching entries can be reduced by entering „logical names“ (e.g. „*Pd/Ni*“ can be entered in the symbol field).

IMDS international Material Data System

Search Criteria: Name=e-plate*,Origin=all,Version=current

Total records found: 31

No.	Name, >Symbol<	Trade name	Mat.-No.	ID / Version	Supplier
17	<u>e-plate Ni (Watts) (electr..., >Ni<</u> -	-	-	748706 / 1	IMDS-Commit...
18	<u>e-plate Pd (electrodepo..., >Pd<</u> -	-	-	758099 / 1	IMDS-Commit...
19	<u>e-plate PdNi (electrod..., >Pd/Ni<</u> -	-	-	758265 / 1	IMDS-Commit...
20	<u>e-plate Ru (electrodepo..., >Ru<</u> -	-	-	758411 / 1	IMDS-Commit...
21	<u>e-plate Sn (electrodepo..., >Sn<</u> -	-	-	756885 / 1	IMDS-Commit...
22	<u>e-plate SnPb15 (el..., >SnPb15<</u> -	-	-	757498 / 1	IMDS-Commit...
23	<u>e-plate SnPb3 (elect..., >SnPb3<</u> -	-	-	757440 / 1	IMDS-Commit...
24	<u>e-plate SnPb37 (el..., >SnPb37<</u> -	-	-	757743 / 1	IMDS-Commit...
25	<u>e-plate Zn (electrodepos..., >Zn<</u> -	-	-	213570 / 4	IMDS-Commit...
26	<u>e-plate ZnCo (electr..., >Zn/Co<</u> -	-	-	736158 / 2	IMDS-Commit...
27	<u>e-plate ZnFe (electro..., >Zn/Fe<</u> -	-	-	213579 / 3	IMDS-Commit...
28	<u>e-plate ZnFeCo (... , >Zn/Fe/Co<</u> -	-	-	736142 / 2	IMDS-Commit...
29	<u>e-plate ZnNi(12..., >Zn/Ni(12-...<</u> -	-	-	736126 / 2	IMDS-Commit...
30	<u>e-plate ZnNi(6-8)..., >Zn/Ni(6-8)<</u> -	-	-	213583 / 3	IMDS-Commit...
31	<u>e-plate ZnNi(9-..., >Zn/Ni(9-1...<</u> -	-	-	736101 / 2	IMDS-Commit...

E-plated layer entries. Search under „e-plate*“ in the box marked material name. The number of matching entries can be reduced by entering „logical names“ (e.g. „*Pd/Ni*“ can be entered in the symbol field).

IMDS international Material Data System

e-plate Zn (electrodeposited Zinc Coatings) 213570 / 4.00

Search View MDS Ingredient

Expand

Collapse

Filter

e-plate Zn (electrodeposited Zinc Coatings)

- carbon
- nitrogen
- chlorine
- zinc

Type Material (MDS)
ID/Version 213570 / 4.00
MDS Supplier IMDS-Committee

Name **e-plate Zn (electrodeposited Zinc Coatings)**

Tradename (EN)

Material No.
Symbol Zn
Classification Zinc alloys

Norms/
Standards

Inhouse Norms

Supplier

Remark **7,1 g/cm³;
standard material for
electrodeposited Zinc Coatings**

Development
Sample Report ☐

Density can be
found here as well

Example using „e-plate Zn“ (electrolytically deposited zinc coatings)

IMDS international Material Data System

Example: Bracket, e-plated with zinc, black chromate film and sealed

■ Chromate films are listed in IMDS

Search Criteria: Name=chromate*,Origin=all,Version=current

Total records found: 7

No.	Name, >Symbol<	Trade name	Mat.-No.	ID / Version	Supplier
➔ 1	Chromate film black Zn	-	-	899586 / 3	IMDS-Commit...
2	Chromate film black ZnFe/ZnCo	-	-	900844 / 3	IMDS-Commit...
3	Chromate film black ZnNi	-	-	900836 / 3	IMDS-Commit...
4	Chromate film blue Zn/ZnFe/ZnNi-	-	-	899505 / 3	IMDS-Commit...
5	Chromate film clear/transparen...	-	-	899555 / 3	IMDS-Commit...
6	Chromate film oliv Zn/ZnFe/Zn...	-	-	900850 / 3	IMDS-Commit...
7	Chromate film yellow Zn/ZnFe/...	-	-	899343 / 3	IMDS-Commit...

Example using „Chromate film black Zn“

IMDS international Material Data System

Example: Bracket, e-plated with zinc, black chromate film and sealed

Chromate film black Zn 899586 / 3.00

Search View MDS Ingredient

Expand Collapse Filter

Chromate film black Zn

- Chromium, ion (Cr 6+)
- Chromium (III) ion
- zinc
- oxygen
- Misc.
- silver

Type: Material (MDS)
ID/Version: 899586 / 3.00
MDS Supplier: IMDS-Committee
Name: Chromate film black Zn
Tradename: (EN)
Material No.:
Symbol:
Classification: Other compounds (e.g. friction linings)
Norms/ Standards:
Inhouse Norms:
Supplier: Data from DGO (Deutsche)
Remark: Mass of the layer 1,6 g/m²; Chromatized Zinc Coatings (made from solutions containing CrVI)

As defined in
Recommendation IMDS 009 the

„Chromate film“ contains CrVI!

unlike „Passivation“ treatments
are CrVI-free!

**Weight of coatings
listed here as well!**

Material composition of black chromate film

IMDS international Material Data System

Example: Bracket, e-plated with zinc, black chromate film and sealed

Surface of component: 310 cm²

■ **Mass calculation of the “Chromate film black Zn”**

By using the surface mass per unit area (1.6g/m²) and component surface area (310 cm²) :

$$310 \text{ cm}^2 \times 1.6 \text{ g/m}^2$$

Result: 49,6 mg “Chromate film black Zn”

Calculation of the material masses of e-plated products, chromate passivated and sealed

IMDS international Material Data System

Example: Bracket, e-plated with zinc, black chromate film and sealed

■ Different types of sealant are listed in IMDS

Search Criteria: Name=sealant*,Origin=all,Version=current

Total records found: 12

No.	Name, >Symbol<	Trade name	Mat.-No.	ID / Version	Supplier
1	Sealant inorg. (Sealant inorga...	-	-	974606 / 2	IMDS-Commit...
2	Sealant inorg./org PUR/PE (S...	-	-	976472 / 2	IMDS-Commit...
3	Sealant inorg./org. lubricated...	-	-	975042 / 2	IMDS-Commit...
4	Sealant inorg./org. PAK (Seal...	-	-	974826 / 3	IMDS-Commit...
5	Sealant inorg./org. PAK black...	-	-	977190 / 2	IMDS-Commit...
6	Sealant inorg./org. PAK lubric...	-	-	976386 / 2	IMDS-Commit...
7	Sealant inorg./org. PUR (Seal...	-	-	974954 / 2	IMDS-Commit...
8	Sealant org. PAK (Sealant or...	-	-	977552 / 2	IMDS-Commit...
9	Sealant org. PAK lubricated (...)	-	-	977768 / 3	IMDS-Commit...
10	Sealant org. PAK/PE (Sealant...	-	-	977617 / 2	IMDS-Commit...
11	Sealant org. PES (Sealant or...	-	-	977400 / 4	IMDS-Commit...
12	Sealant org. PES/CrIII (Sealan...	-	-	977589 / 4	IMDS-Commit...

Example using the sealant marked „Sealant inorg./org. PAK“

IMDS international Material Data System

Example: Bracket, e-plated with zinc, black chromate film and sealed

Sealant inorg./org. PAK (Sealant inorganic/organic... 974826 / 3.00

Search View MDS Ingredie

Expand Collapse Filter

Sealant inorg./org. PAK (Sealant inorganic/organic wi

- silicon dioxide, chemically prepared
- Polyacrylate

Type	Material (MDS)
ID / Version	974826 / 3.00
MDS Supplier	IMDS-Committee
Name	Sealant inorg./org. PAK
Trade name	(Sealant inorganic/organic with content of polyacrylat)
Material-No.	
Symbol	
Classification	Others
Norms/ Standards	
Inhouse Norms	
Supplier	Data from ZVO
Remark	1.2 g/cm ³ , standard material for all inorganic/organc sealants with a content of polyacrylate

Density can be found here as well!

Example using the sealant marked „Sealant inorg./org. PAK“

IMDS international Material Data System

Example: Bracket, e-plated with zinc, black chromate film and sealed

Surface of the component: 310 cm²

- **Sealant mass calculation using density and component surface area:**
Surface area (310 cm²) x Density (1,2g/cm³) x Layer thickness (5µm)
Result : 186 mg of sealant “Sealant inorg./org. PAK”
- **IMDS entry on following page**

Calculation of the material masses of e-plated products, chromate passivated and sealed

IMDS international Material Data System

Example: Bracket, e-plated with zinc, black chromate film and sealed; Result in IMDS

Bracket (Example e-plating) 1125189 / 0.02

Search Edit MDS Ir

Expand
Collapse
Filter

+
+
+
+

Bracket (Example e-plating)

+ 16MnCr5
+ e-plate Zn (electrodeposited Zinc Coatings)
+ carbon
+ nitrogen
+ chlorine
+ zinc
+ Chromate film black Zn
+ Chromium, ion (Cr 6+)
+ Chromium (III) ion
+ zinc
+ oxygen
+ Misc.
+ silver
+ Sealant inorg./org. PAK (Sealant inorganic/organic)
+ silicon dioxide, chemically prepared
+ Polyacrylate

Type
ID / Version
MDS Supplier
Description
Part/Item No.
(Author)
Measured Weight
per Item
Tolerance
Calculated Weight
per Item
Deviation

Development
Sample Report

Component (MDS)
1125189 / 0.02

Bracket (Example e-plating)
Example e-plating
1177 g
+/- 1 [%]
1179.4356 [g]
0.206933 [%]

☐

Calculation of the material masses of e-plated products, chromate passivated and sealed

IMDS international Material Data System

Specifications for passivation treatments as defined in recommendation IMDS 009:

- “Passivation” treatments do not contain CrVI, unlike chromate treatments
- “Passivation” treatments are listed in IMDS

Search Criteria: Name=passivation,Origin=own,Version=current

Total records found: 4

No.	Name, >Symbol<	Trade name	Mat.-No.	ID / Version	Supplier
1	<u>Passivation black ZnFe</u>	-	-	1222871 / 1	IMDS-Commit...
2	<u>Passivation black ZnNi</u>	-	-	1223017 / 1	IMDS-Commit...
3	<u>Passivation thick layer Zn/ZnF...</u>	-	-	900896 / 2	IMDS-Commit...
4	<u>Passivation transp. Zn/ZnFe/Z...</u>	-	-	900924 / 2	IMDS-Commit...

 **Note on transparent passivation treatment:**

Coating may appear faintly red, blue or green due to interference.

Specifications for passivation treatments

IMDS international Material Data System

Specifications for coatings deposited without using electricity (electroless)

Search Criteria: Name=electroless*,Origin=own,Version=current

Total records found: 2

No.	Name, >Symbol<	Trade name	Mat.-No.	ID / Version	Supplier
1	<u>Electroless Copper (Ele..., >EC<</u>	-	-	926933 / 2	IMDS-Commit...
2	<u>Electroless Nickel-Phos..., >EN<</u>	-	-	926754 / 6	IMDS-Commit...

Specifications for electroless deposited coatings

IMDS international Material Data System

Specifications for other coatings e.g. zinc flakes

- Further coating systems have been listed in IMDS by the Suppliers

No.	Name, >Symbol<	Trade name	Mat.-No.	ID / Version	Supplier
1	<u>Delta-Flex S black</u>	Delta-Flex S black	130623	303536 / 1	Doerken MKS...
2	<u>Delta-Flex S schwarz</u>	Delta-Flex S schw...	130623	303536 / 1	Doerken MKS...
3	<u>DELTA-PROTEKT KL 100</u>	DELTA-PROTEKT...	130604	708400 / 1	Doerken MKS...
4	<u>DELTA-PROTEKT VH 301 GZ</u>	DELTA-PROTEKT...	130583	709926 / 1	Doerken MKS...
5	<u>Delta-Seal black</u>	Delta-Seal black	130577	50013 / 2	Doerken MKS...
6	<u>Delta-Seal darkblue</u>	Delta-Seal lightblue	130588	303495 / 1	Doerken MKS...
7	<u>Delta-Seal darkgrey</u>	Delta-Seal darkgrey	130522	135090 / 1	Doerken MKS...
8	<u>Delta-Seal dunkelblau</u>	Delta-Seal darkblue	130588	303495 / 1	Doerken MKS...
9	<u>Delta-Seal dunkelgrau</u>	Delta-Seal dunkel...	130522	135090 / 1	Doerken MKS...
10	<u>Delta-Seal eisengrau</u>	Delta-Seal eiseng...	130554	135069 / 2	Doerken MKS...
11	<u>Delta-Seal FAN black</u>	Delta-Seal FAN bl...	130623	808900 / 1	Doerken MKS...
12	<u>Delta-Seal FAN schwarz</u>	Delta-Seal FAN sc...	130623	808900 / 1	Doerken MKS...
13	<u>Delta-Seal green</u>	Delta-Seal green	130586	303714 / 1	Doerken MKS...
14	<u>Delta-Seal gruen</u>	Delta-Seal gruen	130586	303714 / 1	Doerken MKS...

Examples of further coating systems according to the manufacturer's data