WILLKOMMEN IM INTERNATIONALEN



Electrolytically Coated Components



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.



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

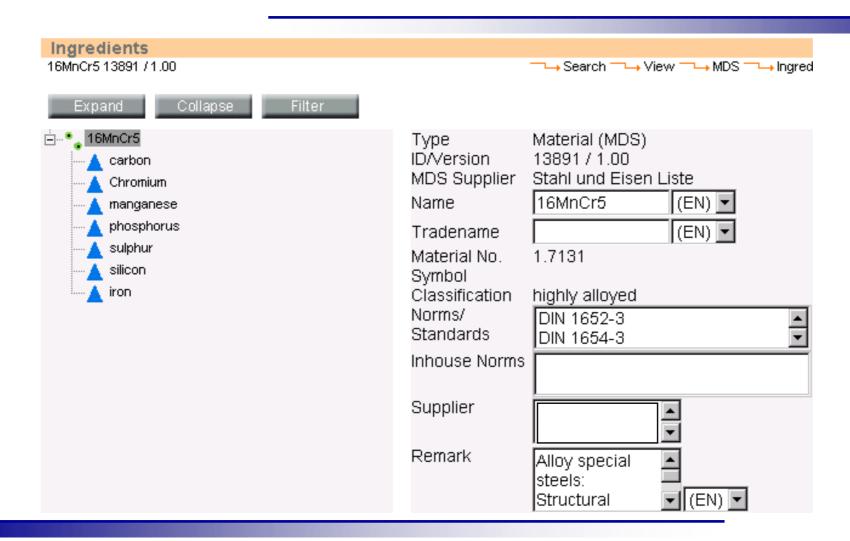
- Mass calculation of the base material for example by using CAD-data or by weighing the uncoated bracket (stripped of zinc)
- This is the total mass of the base material (E.g. 16MnCr5; listed in IMDS under "Stahl und Eisenliste")

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...





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



- 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



Search Criteria: Name=e-plate*,Origin=all,Version=current Total records found: 31						
No.	Name, >Symbol<	Trade name	MatNo.	ID / Version	Supplier	
1 0	-plate Aq (electrodepo, >Aq< -			757767 / 1	IMDS-Commit	
	-plate Ag (Hardsilver) (, >Ag< -		_	757803 / 1	IMDS-Commit	
	-plate Au (functional) (, >Au< -		_	757906 / 1	IMDS-Commit	
	-plate Au (Hardgold) (e, >Au<-		_	758038 / 1	IMDS-Commit	
_	-plate Brass (electr, >Cu/Zn< -		_	736946 / 2	IMDS-Commit	
_	-plate Bronze w, >Cu/Sn/Pb< -		_	736957 / 2	IMDS-Commit	
	-plate Bronze w, >Cu/Sn/Zn< -		_	736948 / 2	IMDS-Commit	
	-plate Bronze v, >Cu/Sn/Z< -		-	736971 / 2	IMDS-Commit	
_	-plate Cr (all) (electrod, >Cr< -		-	756617 / 1	IMDS-Commit	
10 <u>e</u> -	-plate Cu (electrodepo, >Cu< -		-	736943 / 3	IMDS-Commit	
11 <u>e</u> -	-plate Eloxal (electrolytical oxi		-	827507 / 1	IMDS-Commit	
12 <u>e</u> -	-plate Ni (bright) (electr, >Ni< -		-	749088 / 1	IMDS-Commit	
13 <u>e</u> -	-plate Ni (high-sulphur), >Ni< -		-	756348 / 1	IMDS-Commit	
14 <u>e</u> -	<u>-plate Ni (microcrack) (e, >Ni<</u> -		-	748084 / 1	IMDS-Commit	
15 <u>e</u> -	-plate Ni (microporous), >Ni< -		-	748651 / 1	IMDS-Commit	
16 <u>e</u> -	<u>-plate Ni (semi-bright) (, >Ni<</u> -		-	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).



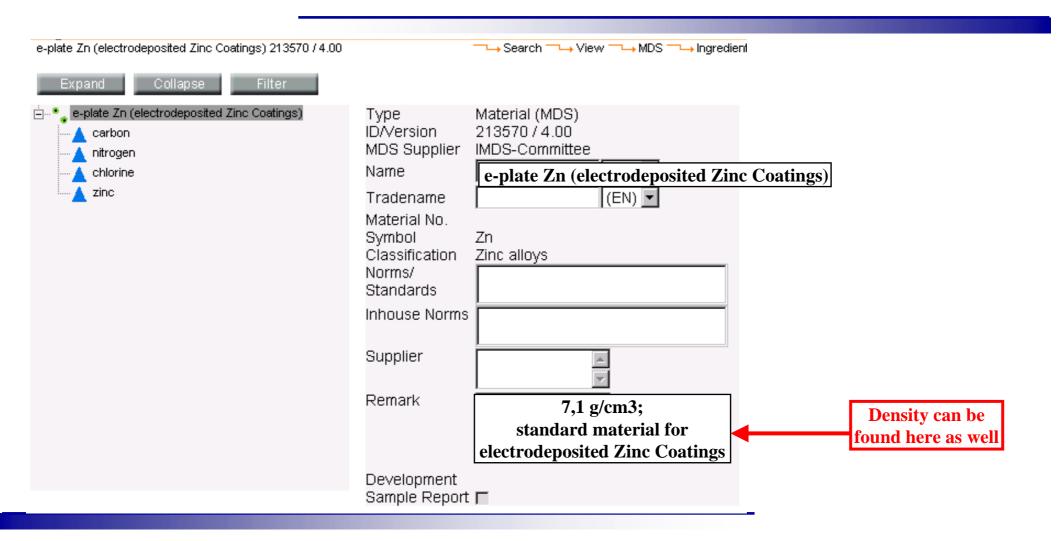
Search Criteria: Name=e-plate*,Origin=all,Version=current

Total records found: 31

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





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



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 nam	e MatNo	. ID / Version	Supplier
L	1	Chromate film black Zn			899586 / 3	IMDS-Commit
'		CHRUMALE MINI DIACK ZII	_	-	09900010	IIIAID9-COUIUII
	2	Chromate film black ZnFe/ZnCo	_	-	900844 / 3	IMDS-Commit
	3	<u>Chromate film black ZnNi</u>	-	-	900836/3	IMDS-Commit
	4	Chromate film blue Zn/ZnFe/ZnNi	<u>[</u> -	-	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"



Example: Bracket, e-plated with zinc, black chromate film and sealed Chromate film black Zn 899586 / 3.00 → Search → View → MDS → Ingredient As defined in Collapse Filter Recommendation IMDS 009 the 🚊 📲 Chromate film black Zn Type Material (MDS) ID/Version 899586 / 3.00 🛕 Chromium, ion (Cr 6+) MDS Supplier IMDS-Committee Chromium (III) ion "Chromate film" contains CrVI! Name Chromate film black Zn zinc (EN) 🔻 oxygen Tradename unlike "Passivation" treatments Material No. are CrVI-free! silver Symbol Other compounds (e.g. friction Classification linings) Norms/ Standards Inhouse Norms Supplier Data from DGO 🔺 (Deutsche Weight of coatings Mass of the layer 1.6 g/m^2 ; Remark listed here as well! **Chromatized Zinc Coatings** (made from solutions containing CrVI)

Material composition of black chromate film



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):

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

Result: 49,6 mg "Chromate film black Zn"



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

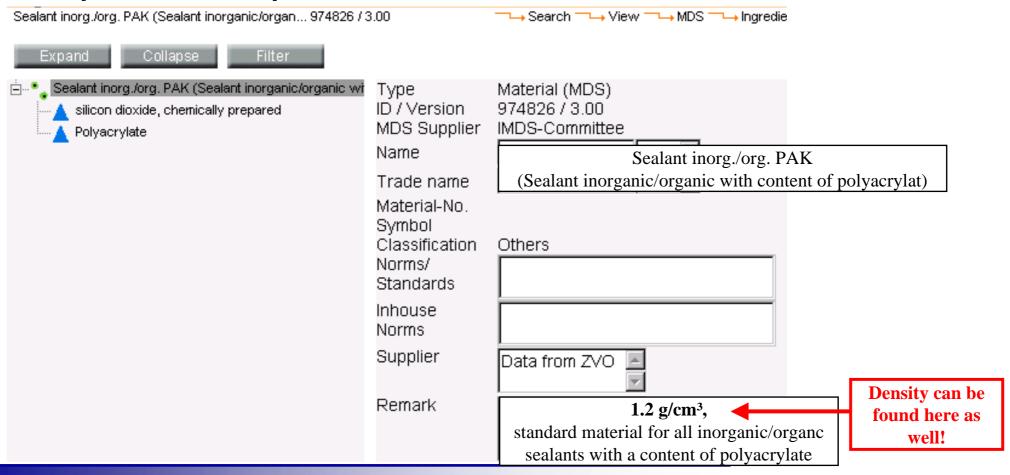
Total records found: 12

No.	Name, >Symbol<	Trade name	MatNo.	ID / Version	Supplier
4	Coolert inera (Coolert inerae			07460670	IMDO Commit
- 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/Crlll (Sealan		-	977589 / 4	IMDS-Commit

Example using the sealant marked "Sealant inorg./org. PAK"



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



Example using the sealant marked "Sealant inorg./org. PAK"



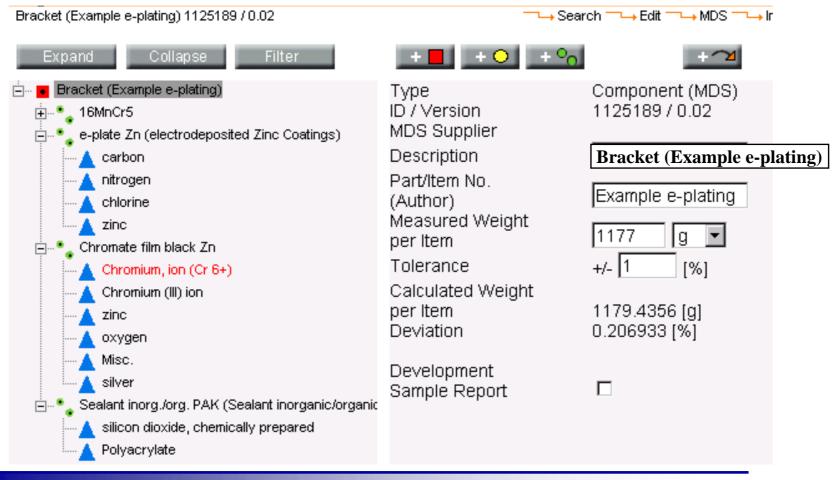
Example: Bracket, e-plated with zinc, black chromate film and sealed

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



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





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		MatNo.	ID / Version	Supplier
1	Passivation black ZnFe	_		_		1222871 / 1	IMDS-Commit
	Passivation black ZnNi	-		-		1223017/1	IMDS-Commit
3	Passivation thick layer Zn/ZnF	-		_		900896/2	IMDS-Commit
4	Passivation transp. Zn/ZnFe/Z	-		-		900924 / 2	IMDS-Commit

Note on transparent passivation treatment:

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

Specifications for passivation treatments



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	MatNo.	ID / Version	Supplier
1	<u> Electroless Copper (Ele, >EC< -</u>	-	-	926933 / 2	IMDS-Commit
2	Electroless Nickel-Phos, >EN<	-	-	926754 / 6	IMDS-Commit

Specifications for electroless deposited coatings



Specifications for other coatings e.g. zinc flakes

Further coating systems have been listed in IMDS by the Suppliers

	<u> </u>				<u> </u>
No.	Name, ≻Symbol<	Trade name	MatNo.	ID / Version	Supplier
1	Delta-Flex S black	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	DELTA-PROTEKT KL 100	DELTA-PROTEKT	130604	708400 / 1	Doerken MKS
4	DELTA-PROTEKT VH 301 GZ	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	Delta-Seal darkgrey	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