

# **Electrolytically coated Fasteners** including Bolts, Nuts, Washers



Example: Screw M10x30 10.9 ISO 4017 e-plated with zinc and yellow chromate film

- Mass calculation of the Screw E.g. by using a production chart from the screw supplier or by weighing
- Mass calculation of the e-plated (electrolytically precipitated) coating by calculating the surface using DSV-Tool (Deutscher Schrauben Verband) (found under FAQs on the IMDS-homepage www.mdsystem.com); Mass calculation using density, thickness and surface area.
  - Mass 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.



#### Example: Screw M10x30 10.9 ISO 4017 e-plated with zinc and yellow chromate film

•	Mass calculation of the for example by using a the uncoated screw This is the total mass of	production chart			t: 27,6 g eighing		
("Standardmaterial for Fasteners <= FKL 12.9" is listed in IMDS)							
This material can be used for fasteners 8.8 and 10.9 as well							
Search Criteria: Name=material for fast*,Origin=all,Version=current Total records found: 1							
No.	Name, >Symbol<	Trade name	MatNo.	ID / Version	Supplier		

Material for Fasteners Propert Material fo

Material for Faste

Description of the material of a Standard Screw e-plated with Zinc and yellow Chromate Film

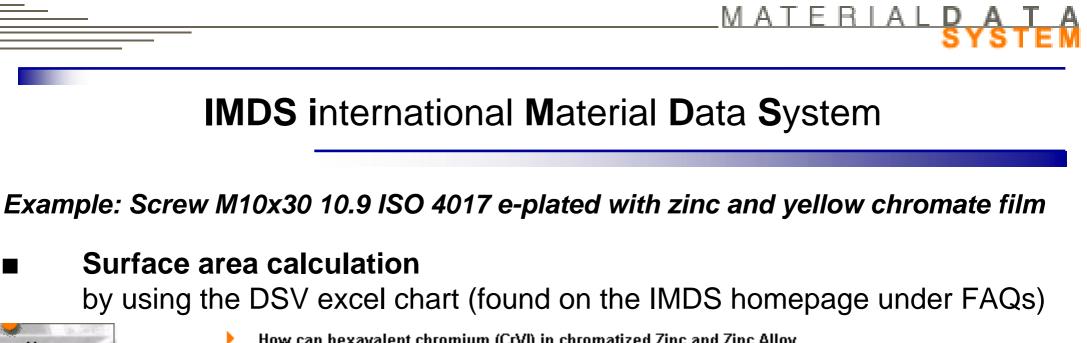
6812475

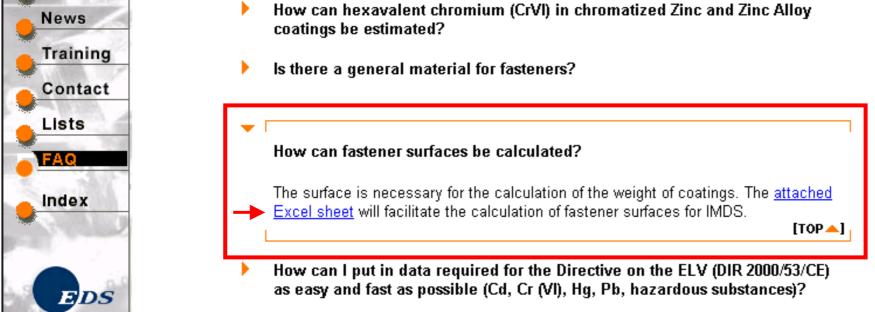
IMDS-Commit



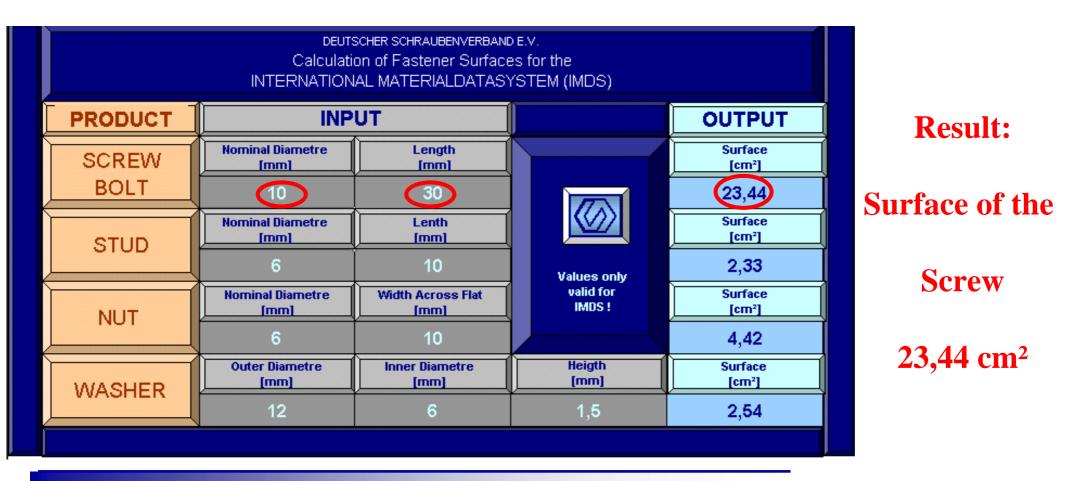
Ingredients Material for Fasteners Property Class <=12.9 68124 / 5.00		→ Search → View → MDS → Ingredients	
Expand Collapse Filter			This material
	Type ID/Version MDS Supplier	Material (MDS) 68124 / 5.00 IMDS-Committee	can be used
sulphur	Name Tradename	Material for Fasteners Property Class <=12. Material for Faste (EN)	9 for fasteners
····▲ manganese ····▲ Chromium ····▲ Molybdenum	Material No. Symbol Classification	unalloyed, low alloyed	8.8 and 10.9
····▲ nickel ····▲ Vanadium	Norms/ Standards	EN 20898-2 ISO 898-1	as well
▲ aluminium ▲ copper ▲ tin	Inhouse Norms Supplier	Material for <b>Fasteners</b> Property Class <=12	2.9.
	Remark	made of unalloyed and low alloyed carbon s Material can also be used for bolts, studs,	steels. , washers, nuts.
Intenium		Chemical Composition see DIN EN 20898- Only for standard parts!! Can not be used material is defined on the drawing.	

#### Standard Material for bolts, studs, washers and nuts!









### DSV-calculation tool for surface area of fasteners

(found on the IMDS-homepage under FAQs)



Example: Screw M10x30 10.9 ISO 4017 e-plated with zinc and yellow chromate film

Mass calculation of the e-plated zinc coating using the density and component surface area Surface (23.44 cm<sup>2</sup>) x Density (7.1 g/cm<sup>3</sup>) x thickness (10 µm=1x10<sup>-3</sup> cm) Result: 166 mg e-plate Zn (electrodeposited Zinc Coatings)

### **IMDS** entry

The e-plated (galvanically precipitated) standard coatings are listed in IMDS



#### Search Criteria: Name=e-plate Zn\*,Origin=all,Version=current Total records found: 7

No.	Name, >Symbol<	Trade name	MatNo.	ID / Version	Supplier
1	e-plate Zn (electrodepos, >Zn<-		-	213570/4	IMDS-Commit
	e-plate ZnCo (electr, >Zn/Co< -		-	736158/2	IMDS-Commit
3	e-plate ZnFe (electro, >Zn/Fe<-		-	213579/3	IMDS-Commit
4	e-plate ZnFeCo (, >Zn/Fe/Co< -		-	736142/2	IMDS-Commit
5	e-plate ZnNi(12, >Zn/Ni(12< -		-	736126 / 2	IMDS-Commit
6	e-plate ZnNi(6-8), >Zn/Ni(6-8)<-		-	213583/3	IMDS-Commit
7	e-plate ZnNi(9, >Zn/Ni(9-1< -		-	736101/2	IMDS-Commit



e-plate Zn (electrodeposited Zinc Coatings) 213570 / 4.00		→ Search → View → MDS → Ingredie
Expand Collapse Filter		
<ul> <li>e-plate Zn (electrodeposited Zinc Coatings)</li> <li>carbon</li> <li>nitrogen</li> <li>chlorine</li> <li>zinc</li> </ul>	Type ID/Version MDS Supplier Name Tradename Material No. Symbol Classification Norms/ Standards Inhouse Norms Supplier Remark	Density can be       7,1 g/cm3;       Standard Material for
	Development	electrodeposited Zinc Coatings
	Sample Report	

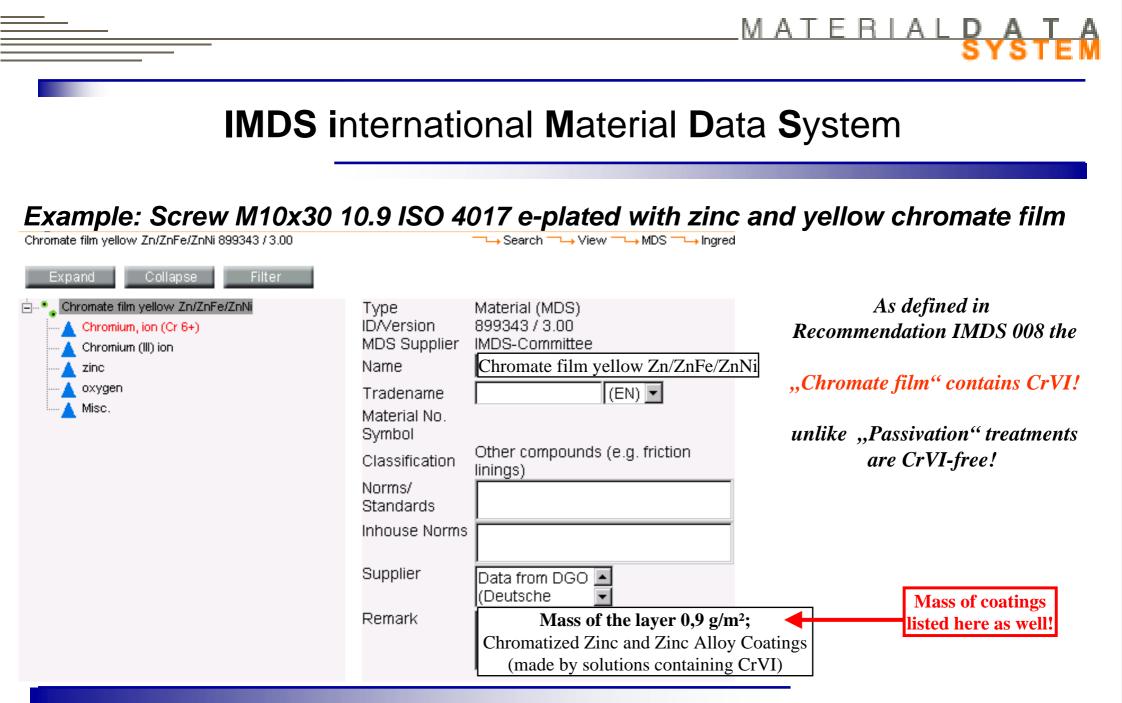


Example: Screw M10x30 10.9 ISO 4017 e-plated with zinc and yellow chromate film

#### Chromate films of different types are listed in IMDS

Search Criteria: Name=chromate film\*,Origin=all,Version=current Total records found: 7

No.	Name, >Symbol<	Trade name	MatNo.	ID / Version	Supplier
1	Chromate film black Zn	-	_	89958673	IMDS-Commit
2	Chromate film black ZnFe/ZnCo	-	-	900844 / 3	IMDS-Commit
З	<u>Chromate film black ZnNi</u>	-	-	900836/3	IMDS-Commit
4	Chromate film blue Zn/ZnFe/ZnNi		-	899505/3	IMDS-Commit
5	Chromate film clear/transparen	-	-	89955573	IMDS-Commit
6	Chromate film oliv Zn/ZnFe/Zn	-	-	900850/3	IMDS-Commit
7	Chromate film yellow Zn/ZnFe/	-	-	899343/3	IMDS-Commit



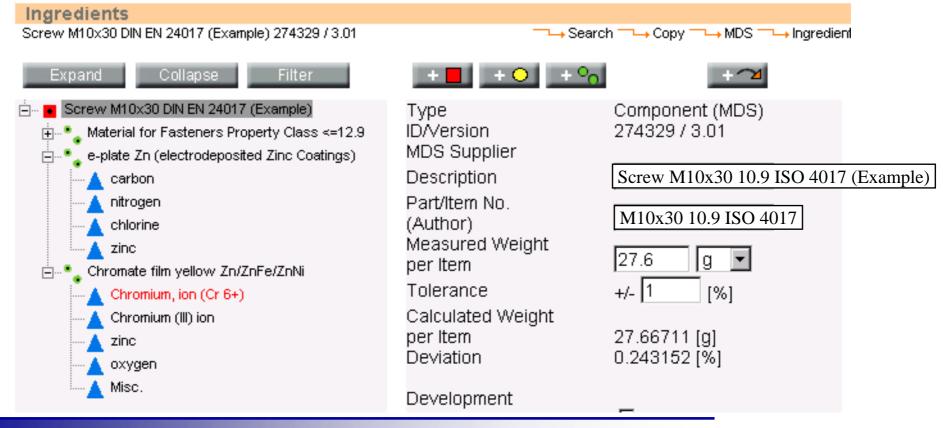


Example: Screw M10x30 10.9 ISO 4017 e-plated with zinc and yellow chromate film

Mass calculation of the Chromate film yellow Zn/ZnFe/ZnNi by using the surface mass per unit area (0,9g/m<sup>2</sup>) and the component surface area (23,44 cm<sup>2</sup>) Mass of the layer (0.9 g/m<sup>2</sup>) x Surface (23.44 cm<sup>2</sup>) Result: 2.11 mg "Chromate film yellow Zn/ZnFe/ZnNi"



#### Example: Screw M10x30 10.9 ISO 4017 e-plated with zinc and yellow chromate film Result in the IMDS





Specifications for passivation treatments:

#### 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 refraction.

#### **Specifikation for passivation treatments**



#### **Different types of sealants 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
1 Sealant	: inorg. (Sealant inorga	-	_	974606 / 2	IMDS-Commit
	: inorg./org PUR/PE (S		-	976472/2	IMDS-Commit
3 <u>Sealant</u>	: inorg./org. lubricated	-	-	975042/2	IMDS-Commit
4 <u>Sealant</u>	<u>: inorg./org. PAK (Seal</u>	-	-	974826/3	IMDS-Commit
5 <u>Sealant</u>	: inorg./org. PAK black	-	-	977190/2	IMDS-Commit
6 <u>Sealant</u>	<u>: inorg./org. PAK lubric</u> ·	-	-	976386 / 2	IMDS-Commit
7 <u>Sealant</u>	<u>: inorg./org. PUR (Seal</u>	-	-	974954 / 2	IMDS-Commit
8 <u>Sealant</u>	<u>: org. PAK (Sealant or</u>	-	-	977552/2	IMDS-Commit
9 <u>Sealant</u>	: org. PAK lubricated (	-	-	977768/3	IMDS-Commit
10 Sealant	<u>: org. PAK/PE (Sealant</u>	-	-	977617/2	IMDS-Commit
11 Sealant	<u>: org. PES (Sealant or</u>	-	-	977400/4	IMDS-Commit
12 Sealant	: org. PES/CrIII (Sealan)	-	-	977589/4	IMDS-Commit

The assignment of a particular product to a certain sealant listed in IMDS can be inquired of the sealant supplier.

#### **Specification of sealants**