



# Safety Data Sheet

## For the use of an Article

(Not required by the REACH – GHS Regulations)

### 1. IDENTIFICATION OF THE ARTICLE AND OF THE COMPANY/UNDERTAKING

**Date drawn up:** 12/05/2010

**Date of latest revision:** 12/05/2010

**Version number:** 1

**Brand name:** **Electrogalvanized steels**

**Reach status:** Article

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**Uses:** Steel for drawing, welding, etc.  
Domestic appliances: washing machines, dryers, dish washers, cookers, microwave oven, refrigerators, hi-fi equipment, cover components etc  
General industry: electrical cabinets, metal furniture, heating and ventilation, raceways etc  
Construction: profiling, roofing, cladding, structural components etc  
Teletronics: computers, laptop and hi-fi casings, casings for TVs, video and CD players, decoders etc  
Furniture: cupboards, desks, shelves, electrical cabinets etc  
Miscellaneous: air conditioners, road signs, electric motors, toys, construction items, electrical cabinets, aeraulic components, air conditioners, road signs etc

**Range:**

Designation	Standard	Commercial Sheet
Electrolytically zinc coated cold rolled steel flat products for cold forming	EN10152	E10 + E70 + E80
Cold rolled steel flat products with high yield strength for cold forming	EN10268 + EN10152	

**2. HAZARDS IDENTIFICATION****Specific hazards:**

Related to protective oil, for articles delivered oiled.  
Prephosphated: related to nickel

**Skin contact:**

In the event of direct contacts (without gloves) frequent or prolonged (oils, prephosphatation (nickel)):  
- Local effects: Possible irritation phenomena.  
- Sensitization: Possible allergy phenomena.

**Eye contact:**

Indirect (protective oil)

Local effects: risk of irritation.

**Inhalation:**

Respect of the occupational exposure limit values noted in this SDS. See heading 8.

**Ingestion:**

Not applicable as it is.

**Main hazard to the environment:**

None.

**Prevention: Safety gloves and glasses must be worn during handling.**

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Ingredients (percent by weight):**

Steel Substrate	Metallic Coating	Surface Treatments			Other
		Pre Phosphatation	E-Passivation®	Easyfilm®E	
<u>Main elements:</u> Fe > 95%, Mn < 1.6%, Al < 2%, Si < 0.5 %.  <u>Other elements:</u> P < 0.045%, Nb < 0.09%, Ti < 0.3%.	Pure zinc	Inorganic salts (nickel)	- Inorganic salts - Eventual presence of PolyAcrylic resin	- Organic salts - PolyAcrylic resin	Oil

**Dangerous impurities:**

None.

**4. FIRST AID MEASURES****Specific hazards:**

Related to protective oil, prephosphatation.

**Skin contact:**

Wash well with soap and large amounts of water.

**Eye contact:**

Indirect (protective oil)

Rinse with large amounts of water.  
Take medical advice.

**Inhalation:**

Not applicable as it is.

**Ingestion:**

Not applicable as it is.

**Specific first aid:**

Not applicable as it is.

**5. FIRE FIGHTING MEASURES****Specific hazards:**

Non-flammable.

**Extinguishing media:**

Use extinction means suitable with the stored products in the vicinity.

**Specific protective measures:**

No specific measures.

**Specific dangers:**

Not specifically concerned.



## 6. ACCIDENTAL RELEASE MEASURES

<b>Individual precautions:</b>	Not applicable as it is.
<b>Environment precautions:</b>	Article generates no particular environmental hazards.
<b>Clean-up and recovery procedures:</b>	Not specifically concerned.

## 7. HANDLING AND STORAGE

<b>Precautions to be taken during handling:</b>	Delivered packaged. Normal precautions should be taken to avoid injuries possibly by sharp edges or by release of tension when breaking the straps.
<b>Packaging materials:</b>	Steel sheet and/or paper + tightened strip.
<b>Precautions to be taken during storage and packaging:</b>	Related to packaging: safety gloves (cuts), glasses and shoes must be worn. Risk of oil retention in bottom of packaging. When storing sheets, the risk of accidentally slipping should be kept in mind.
<b>Incompatible materials:</b>	Article has not to be stored where acids are present.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>Whole-body protection:</b>	Wear worker clothes.
<b>Protection of hands:</b>	Gloves anti-cuts.
<b>Protection of eyes and/or face:</b>	Safety glasses when opening packaging.
<b>Respiratory protection:</b>	Not applicable to article as it is.
<b>Emergency facilities:</b>	Not applicable to article as it is.
<b>Other information:</b>	Safety shoes must be worn.
<b>During welding, grinding, recycling by remelting:</b>	

### Abbreviations:

TLV: Threshold Limit Value  
 VEMP: Valeur d'Exposition Moyenne Pondérée  
 VECD/P: Valeur plafond  
 EV: Exposure Value  
 EL: Exposure Limit  
 P: Permissible  
 R: Recommended  
 W: Workplace  
 TWA: Time-Weighted Average  
 ST: Short-Term  
 C: Ceiling  
 NIC: Note of Intended Changes  
 L: Exposure by all routes should be carefully controlled to levels as low as possible  
 IDLH: Immediately Dangerous to Life or Health concentrations  
 Ca: The notation "Ca" appears in the IDLH field for all substances that NIOSH considers potential occupational carcinogens  
 NIOSH: The National Institute for Occupational Safety and Health  
 OSHA: Occupational Safety and Health Administration  
 CMR: Carcinogenic, Mutagenic and toxic for the Reproduction  
 (A): alveolar fraction; (I): inhalable fraction; (R): respirable fraction  
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Specific information on substances

Substance and its inorganic compounds	Melting point °C	Boiling Point °C	Risks
<b>Manganese</b>	1244	1962	Risk of metal fume fever among persons exposed. Risk of manganism among persons exposed.
<b>Aluminium</b>	660	2518	Risk of aluminium exposure à during welding.
<b>Silicon</b>	1413	2899	-
<b>Phosphorus</b>	44	276	-
<b>Niobium</b>	2476	4743	
<b>Titanium</b>	1667	3286	-
<b>Nickel for pre-phosphatation</b>	1455	2913	Risk of nickel and nickel oxides exposure during welding. Allergy: in case of welding, respiratory allergic reactions can occur among sensitised persons. Nickel oxides have been identified as carcinogen.
<b>For oil, E-passivation and Easyfilm E:</b>	Not applicable	Not applicable	During welding, there is emission of fumes and gases containing, in particular, carbon dioxide and carbon monoxide as well as Organic Compounds, including CMR* substances at trace level, like for all organic coated materials welded and some methacrylate or acrylate compounds in the case of use of E-passivation® containing an acrylic part or Easyfilm E.

**Exposure limit values in mg/m<sup>3</sup><sup>1</sup>**

Substance	United Kingdom – EL		United States – ACGIH – TLV	
	W – TWA	W – ST	TWA	ST or C
Dust	10(l) – 4(R)	-	-	10(l) – 3(R)
Fe <sub>2</sub> O <sub>3</sub>	5 (fume) as Fe	10 (fume) as Fe	5(R)	-
Manganese as Mn	0.5	-	0.2	-
Aluminium as Al	10(l) – 4(R)	-	1(R)	-
Silicon	10(l) – 4(R)	--	10 (withdrawn in 2006)	-
Amorphous silica (SiO <sub>2</sub> )	6(l) – 2.4(R)	-	2(R) (withdrawn in 2006)	-
Phosphorus as P <sub>2</sub> O <sub>5</sub>	1	2	-	-
Niobium	-	-	-	-
Titanium	-	-	-	-
Titanium dioxide	10(l) – 4(R)	-	-	-
Zinc oxide	-	-	2	10
Nickel as Ni <sup>2</sup>	0.5	-	1.5(l) 0.1(l) (soluble) 0.2(l) (insoluble)	-

<sup>1</sup> TLVs and BEIs – USA ACGIH, 2008. California: Table AC-1 Permissible Exposure Limits for chemical contaminants. Michigan: Department of consumer & industry services director's office occupational health standards (as amended April 23, 2001). Minnesota: Subpart z -- Toxic and Hazardous Substances 1910.1000-air contaminants. Washington: Evaluate and Control employee Exposures Chapter 296-841 WAC, table 3 Permissible Exposure Limits (PELs) for airborne contaminants. Quebec: Règlement sur la santé et la sécurité du travail Incluant la Gazette officielle du 30 Janvier 2009). Ireland: 2007 Code of Practice for the Safety, Health and Welfare at Work (Chemical Agents) Regulations 2001 (S.I. No. 619 of 2001), Permissible exposure limits are published in the U.S. Code of Federal Regulations, Occupational Safety and Health Standards on Toxic and Hazardous Substances, 29 CFR 1910.1000, Tables Z-1 and Z-3. NIOSH pocket guide to chemical hazards, Department of Health and Human Services Centers for disease control and prevention, National institute for occupational safety and health, September 2007 DHHS (NIOSH) publication no. 2005-149. Occupational Health and Safety Act, Loi sur la santé et la sécurité au travail, R.R.O. 1990, REGULATION 833, Amended to O. Reg. 607/05, Ontario (December 2009). Alberta: Occupational Health and Safety Code 2009. EH40/2005 Workplace exposure limits – United Kingdom, October 2007.

<sup>2</sup> In case of prephosphatation  
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Substance	United Kingdom – EL		United States – ACGIH – TLV	
	W – TWA	W – ST	TWA	ST or C
<i>For oil, E-passivation and EasyfilmE</i>				
Carbon Monoxide	35	232	29	-
Carbon Dioxide	9150	27400	9150	54800
Benzene	3.25	-	1.6	8
1, 3-butadiene	22	-	4.4	-
Formaldehyde	2.5	2.5	-	0.37C
Benzo(a)pyren	-	-	L*	-
Zirconium as Zr	5	10	5	10
Hydrogen Fluoride as F <sup>3</sup>	1.5	2.5	0.5 ppm	2C ppm
Fluorides as F <sup>3</sup>	2.5	-	2.5	-

Substance	United States – California – EL			United States – Michigan – EL		
	P	ST	C	TWA	ST	C
Dust	10 – 5(R)	-	-	15 – 5(R)	-	-
Fe <sub>2</sub> O <sub>3</sub> as Iron	5 (fume)	-	-	10 (fume)	-	-
Manganese as Mn	0.2 (fume and compounds)	3 (fume)	-	1 (fume)	3 (fume)	5 (compounds)
Aluminium as Al	5 (welding fumes)	-	-	5 (welding fumes)	-	-
Silicon	10 – 5(R)	-	-	10 – 5(R)	-	-
Amorphous silica (SiO <sub>2</sub> )	6 – 3(R)	-	-	6	-	-
Phosphorus as P <sub>2</sub> O <sub>5</sub>	-	-	-	-	-	-
Niobium	-	-	-	-	-	-
Titanium	-	-	-	-	-	-
Titanium dioxide	10 – 5(R) as Ti	-	-	10	-	-
Zinc oxide fume	5	10	-	5	10	-
Nickel as Ni <sup>2</sup>	1 (metal and insoluble) 0.1 (soluble)	-	-	1 (metal and insoluble) 0.1 (soluble)	-	-

<i>For oil, E-passivation and EasyfilmE</i>						
Carbon Monoxide	29	-	232	40	-	229
Carbon Dioxide	9000	54000	-	18000	54000	-
Benzene	3.19	15.95	-	3.19	15.97	-
1, 3-butadiene	2.2	11	-	2.2	11.1	-
Formaldehyde	0.92	2.46	-	0.9	2.5	-
Benzo(a)pyren	-	-	-	-	-	-
Zirconium as Zr	5	10	-	5	10	-
Hydrogen Fluoride as F <sup>3</sup>	2.5	6 ppm	-	3 ppm	6 ppm	-
Fluorides as F <sup>3</sup>	2.5	-	-	2.5	-	-

<sup>3</sup> in case of E-passivation containing fluorides  
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Substance	United States – Minnesota – EL			United States – Washington – EL		
	P	ST	C	TWA	ST	C
Dust	15 – 5(R)	-	-	15 – 5(R)	20 – 10(R)	-
Fe <sub>2</sub> O <sub>3</sub> as Iron	10 (fume) Total particulate	-	-	5 (dust and fume)	10 (dust and fume) Total particulate	-
Manganese as Mn	1 (fume)	3 (fume)	5 (compounds)	1 (fume)	3 (fume)	5 (compounds)
Aluminium as Al	5 (welding fumes)	-	-	5 (welding fumes)	10 (welding fumes)	-
Silicon	10 – 5(R)	-	-	10 – 5(R)	20 – 10(R)	-
Amorphous silica (SiO <sub>2</sub> )	6	-	-	6	12	-
Phosphorus as P <sub>2</sub> O <sub>5</sub>	-	-	-	-	-	-
Niobium	-	-	-	-	-	-
Titanium	-	-	-	-	-	-
Titanium dioxide	10 – 5(R)	-	-	10	20	-
Zinc oxide fume	5	10	-	5	10	-
Nickel as Ni <sup>2</sup>	1 (metal and insoluble) 0.1 (soluble)	-	-	1 (metal and insoluble) 0.1 (soluble)	3 (metal and insoluble) 0.3 (soluble)	-
<i>For oil, E-passivation and EasyfilmE</i>						
Carbon Monoxide	40	-	229	40	232 (5min)	1740
Carbon Dioxide	18000	54000	-	9150	54800	-
Benzene	3.19 (see 1910.1028)	15.95	-	3.19 (see chapter 296-849 WAC)	15.95	-
1, 3-butadiene	2.21 (see 1910.1051)	11.05	-	2.21 (see WAC 296- 62-07460)	11.05	-
Formaldehyde	0.92 (see 1910.1048)	2.46	-	0.92 (see chapter 296-856 WAC)	2.46	-
Benzo(a)pyren	-	-	-	-	-	-
Zirconium as Zr	5	10	-	5	10	-
Hydrogen Fluoride as F <sup>3</sup>	3 ppm	6 ppm	-	-	-	3 ppm (as HF)
Fluorides as F <sup>3</sup>	2.5	-	-	2.5	5	-

Substance	United States –EL (OSHA)		United States – EL (NIOSH)	
	P – TWA	P – C	R – TWA	R – ST
Dust	15 – 5(R)	-	-	-
Fe <sub>2</sub> O <sub>3</sub>	10 (fume)	-	5 (fume and dust)	-
Manganese as Mn	-	5 (fume and compounds)	1 (fume and compounds)	3 (fume and compounds)

Substance	United States –EL (OSHA)		United States – EL (NIOSH)	
	P – TWA	P – C	R – TWA	R – ST
Aluminium as Al	15 – 5(R)	-	5 (welding fumes)	-
Silicon	15 – 5(R)	-	10 – 5(R)	-
Amorphous silica (SiO <sub>2</sub> )	-	-	6	-
Phosphorus (as P <sub>2</sub> O <sub>5</sub> )	-	-	-	-
Niobium	-	-	-	-
Titanium	-	-	-	-
Titanium dioxide	15	-	-	IDLH: 5000 Ca
Zinc oxide fume	5	-	5	10
Nickel as Ni <sup>2</sup>	1	-	0.015 Ca	-
<i>For oil, E-passivation and EasyfilmE</i>				
Carbon Monoxide	55	-	40	229C
Carbon Dioxide	9000	-	9000	54000
Benzene	3.19 (see 1910.1028)	15.95	0.319 Ca	3.19 Ca
1, 3-butadiene	2.21 (see 1910.1051)	11.05	-	IDLH: 4420 Ca
Formaldehyde	0.92 (see 1910.1048)	2.46 ST	0.02	0.123
Benzo(a)pyren	-	-	-	-
Zirconium as Zr	5	-	5	10
Hydrogen Fluoride <sup>3</sup>	3 ppm	-	3 ppm	6C ppm
Fluorides <sup>3</sup>	-	-	-	-

Substance	Canada – Quebec		Ireland – EL	
	VMEP	VECD/P	TWA	ST
Dust	10	-	4 (R) – 10 (I)	-
Fe <sub>2</sub> O <sub>3</sub> as Iron	5 (fume and dust)	-	5 (fumes)	10 (fume)
Manganese as Mn	1 (fume); 5 (dust and compounds)	3 (fume)	1 (fume); 0.2 (compounds)	3 (fume)
Aluminium (as Al)	5 (welding fumes)	-	5 (welding fumes)	-
Silicon	10	-	10 – 4(R)	-
Amorphous silica (SiO <sub>2</sub> )	2 (fumes)	-	6 – 2.4(R)	-
Phosphorus as P <sub>2</sub> O <sub>5</sub>	-	-	-	2
Niobium	-	-	-	-
Titanium	-	-	-	-
Titanium dioxide	10	-	10 – 4(R)	-
Zinc oxide fume	5	10	5	10
Nickel as Ni <sup>2</sup>	1 (metal and insoluble) 0.1 (soluble)	-	0.5 (metal and insoluble) 0.1 (soluble)	-

Substance	Canada – Quebec		Ireland – EL	
	VMEP	VECD/P	TWA	ST
<i>For oil, E-passivation and EasyfilmE</i>				
Carbon Monoxide	40	230	23	115
Carbon Dioxide	9000	54000	9000	27000
Benzene	3	15.5	3	-
1, 3-butadiene	4.4	-	2.2	-
Formaldehyde	-	3P	2.5	2.5
Benzo(a)pyren	0.005	-	-	-
Zirconium as Zr	5	10	5	10
Hydrogen Fluoride as F <sup>3</sup>	-	2.6P	1.5	2.5
Fluorides as F <sup>3</sup>	2.5	-	2.5	-

Substance	Canada – Alberta – EL			Canada – Ontario – EV		
	TWA	ST	C	TWA	ST	C
Dust	-	-	-	10 (I) – 3(R)	-	-
Fe <sub>2</sub> O <sub>3</sub>	5 (R)	-	-	5 (R)	-	-
Manganese as Mn	0.2	-	-	0.2	-	-
Aluminium as Al	10 (metal and oxide dust)	-	-	10 (metal and oxide dust)	-	-
Silicon	-	-	-	10	-	-
Amorphous silica (SiO <sub>2</sub> )	-	-	-	2(R) (fume)	-	-
Phosphorus as P <sub>2</sub> O <sub>5</sub>	-	-	-	-	-	-
Niobium	-	-	-	-	-	-
Titanium	-	-	-	-	-	-
Titanium dioxide	10	-	-	10	-	-
Zinc oxide	2 (R)	10 (R)	-	2 (R)	10 (R)	-
Nickel as Ni <sup>2</sup>	1.5 0.1 (soluble) 0.2 (insoluble)	-	-	1 0.2 (I) (insoluble) 0.1 (I) (soluble)	-	-
<i>For oil, E-passivation and EasyfilmE</i>						
Carbon Monoxide	29	-	-	29	115	-
Carbon Dioxide	9000	-	-	9000	54000	-
Benzene	1.6	8	-	1.6	7.97	-
1, 3-butadiene	4.4	-	-	4.42	-	-
Formaldehyde	0.9	-	1.3	-	1.23	1.84
Benzo(a)pyren	-	-	-	- <sup>4</sup>	-	-
Zirconium as Zr	5	10	-	5	10	-
Hydrogen Fluoride (as F) <sup>3</sup>	0.4	-	1.6	0.5 ppm	-	2 ppm
Fluorides <sup>3</sup>	2.5 (as F)	-	-	2.5	-	-

**Exposure path:** Air.

**Associated symptoms:** None.

<sup>4</sup> Known toxic agents for which exposure values have not been established, and to which any exposure should be avoided  
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**Prevention:**

During any processing of the article (welding, grinding, cutting, recycling by remelting, etc.) in which dust, fumes or gas can be generated, ensure that the limits listed above are not exceeded at the workplace.

Extraction is therefore recommended at the workplace. Otherwise, personal protective equipments (PPE) should be necessarily worn\*\*.

**Hygiene:**

Not applicable to article as it is.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Physical state:**

Solid.

**Colour:**

Metallic appearance.

**pH:**

Not applicable.

**Characteristic temperatures:**

Not applicable.

**Flash point:**

Not applicable.

**Oxidizing properties:**

Not applicable.

**Specific density:**

About 7800 Kg/m<sup>3</sup>.

**Solubility:**

Not applicable, article not soluble in water.

**Radioactivity:**

None in all cases.

**10. STABILITY AND REACTIVITY**

**Stability:**

Stable.

**Hazardous reactions:**

No known hazardous reactions with usual substances.

**Hazardous decomposition products:**

None.

**Materials to be avoided:**

None.

**Conditions to be avoided:**

None.

**11. TOXICOLOGICAL INFORMATION**

**Specific hazards:**

Related to protective oil, for articles delivered oiled. See specific SDS of used protective oil.  
Prephosphated: related to nickel

**Skin contact:**

In the event of direct contacts (without gloves) frequent or prolonged (oils, prephosphatation (nickel)):  
- Local effects: Possible irritation phenomena.  
- Sensitization: Possible allergy phenomena.  
Safety gloves should be worn during handling.

**Eye contact:**

Indirect (protective oil)

Local effects: risk of irritation.  
Safety glasses should be worn.

**Inhalation:**

Respect of the occupational exposure limit values noted in this SDS. See heading 8.

**Ingestion:**

Not applicable as it is.

\*\* It will be noted that collective protection should be firstly used prior to PPEs.



## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:** Article insoluble in water. Material recycled from scraps.

## 13. DISPOSAL CONSIDERATIONS

**Treatment procedure prior to disposal/  
destruction:** Article recyclable and recycled from scraps in compliance with Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end of life vehicles and Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

**Used packaging cleaning, treatment,  
destruction procedures:** Destruction of packaging in accordance with applicable legislation

## 14. TRANSPORT INFORMATION

The article is not dangerous with regard to transport rules.

## 15. REGULATORY INFORMATION

**E.U. compulsory labeling:** No labeling required.

**Specific protection of workers:** Not applicable.

## 16. OTHER INFORMATION

No other information.

### **Comments to the Users:**

*Due to the fact that the product concerned in this document has a status of article in the meaning of the Reach regulation, this document doesn't constitute a Safety Data Sheet in the meaning of the article 31 of the REACH regulation n° 1907-2006. In consequence, its supply is purely facultative. It enables to communicate the risks related to the processing of the article.*

*This sheet supplements but does not replace instruction manuals. The information contained herein is given to the best of our knowledge concerning the article indicated on the date on which it was updated. Information is provided in good faith.*

*Attention of users is also drawn to possible risks which may arise if the article is applied for purposes other than those for which it has been designed.*

*This sheet does not in any way exempt the user from knowing and complying with all the regulatory texts applying to his or her activity. The user takes full responsibility for knowing and taking the precautions related to the use of the article. References to regulatory provisions are given to assist the user in fulfilling the obligations incumbent on persons using a dangerous preparation.*

*All local and international measures and provisions which could apply should be referred to.*

*Attention of users is drawn to the possible existence of other provisions supplementing these rules.*

*This list is not to be taken as comprehensive. It does not exempt the user from ensuring that obligations under texts other than those to which reference is made do not apply to the detention and use of the article, for which the user alone is responsible.*