



## Safety Data Sheet according to (EC) No 1907/2006

Page 1 of 13

SDS No. : 1048230  
V001.0

HYSOL GR 2310

Revision: 21.03.2018  
printing date: 21.03.2018

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

HYSOL GR 2310

#### Contains:

Phenol-formaldehyde polymer  
Bisphenol-F epichlorhydrin resin; MW<700

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use:  
Molding Compound

#### 1.3. Details of the supplier of the safety data sheet

Manufacturer  
Hysol Huawei Electronic Co., Ltd.  
Songtiao Industrial Zone, Lianyungang, Jiangsu, China,  
222000  
T: +86 518-85155187  
F: +86 518-85155060

#### 1.4. Emergency telephone number

24 Hours Emergency Tel: +86 18115208319

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification (CLP):

Skin sensitizer  
H317 May cause an allergic skin reaction.

Category 1

#### 2.2. Label elements

##### Label elements (CLP):

##### Hazard pictogram:



##### Signal word:

Warning

**Hazard statement:** H317 May cause an allergic skin reaction.

**Precautionary statement:** P280 Wear protective gloves.  
**Prevention**

**Precautionary statement:** P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
**Response**

**2.3. Other hazards**  
None if used properly.

### SECTION 3: Composition/information on ingredients

#### 3.2. Mixtures

**General chemical description:**

Resin

**Base substances of preparation:**

Phenolic resin  
Epoxy resin  
organic amine  
Filler

**Declaration of the ingredients according to CLP (EC) No 1272/2008:**

Hazardous components CAS-No.	EC Number	content	Classification
Silica, vitreous 60676-86-0	262-373-8	60- < 80 %	Not classified
Formaldehyde, polymer with (chloromethyl)oxirane and 2-methylphenol 29690-82-2	-	10- < 20 %	Not classified
Phenol-formaldehyde polymer 9003-35-4	500-005-2	5- < 10 %	Eye Irrit. 2 H319 STOT SE 3 H335 Skin Sens. 1 H317
1,3,5-triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6- triamine (1:1) 37640-57-6	253-575-7	1- < 5 %	STOT RE 2 H373
Ti-oxide 13463-67-7		1- < 5 %	Not classified
Boron zinc hydroxide oxide 138265-88-0	235-804-2	0,25- < 2,5 %	Aquatic Acute 1 H400 Eye Irrit. 2 H319 Repr. 2 H361fd
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	500-006-8	0,1- < 1 %	Skin Irrit. 2; Dermal H315 Skin Sens. 1; Dermal H317 Aquatic Chronic 2 H411
1,8-Diazabicyclo[5.4.0]undec-7-ene 6674-22-2	229-713-7	0,1- < 1 %	Acute Tox. 3; Oral H301 Skin Corr. 1B H314

For full text of the H - statements and other abbreviations see section 16 "Other information".  
Substances without classification may have community workplace exposure limits available.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

**Inhalation:**

Move to fresh air, consult doctor if complaint persists.

**Skin contact:**

Rinse with running water and soap.

**Eye contact:**

Immediately flush eyes with soft jet of water or eye rinse solution for at least 5 minutes. If pains remains (intensive smarting, sensitivity to light, visual disturbance) continue flushing and contact/seek doctor or hospital.

**Ingestion:**

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

**4.2. Most important symptoms and effects, both acute and delayed**

SKIN: Rash, Urticaria.

Prolonged or repeated contact may cause eye irritation.

**4.3. Indication of any immediate medical attention and special treatment needed**

See section: Description of first aid measures

## SECTION 5: Firefighting measures

**5.1. Extinguishing media**

**Suitable extinguishing media:**

All common extinguishing agents are suitable.

**5.2. Special hazards arising from the substance or mixture**

Danger of decomposition if exposed to heat.

Silicon dioxide

**5.3. Advice for firefighters**

Do not breathe combustion gases.

Wear self-contained breathing apparatus.

**Additional information:**

Avoid open flames and sources of ignition.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Avoid dust formation.

Depending on workplace dust concentration, wear dust filter mask with particle filter P1, P2 or P3.

Wear protective equipment.

Ensure adequate ventilation.

Keep away from sources of ignition.

**6.2. Environmental precautions**

Do not allow to enter the ground / soil.

**6.3. Methods and material for containment and cleaning up**

Remove all sources of ignition.

Remove mechanically.

Use appropriate industrial vacuum cleaners or central vacuum systems for dust removal.

Ensure adequate ventilation.

Dispose of contaminated material as waste according to Section 13.

**6.4. Reference to other sections**

See advice in section 8

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Avoid dust formation.

Avoid naked flames, sparking and sources of ignition.

Avoid dust development and deposition - dust explosion risk. Take precautionary measures against static discharges.

Hygiene measures:

Wash hands before work breaks and after finishing work.

Do not eat, drink or smoke while working.

Good industrial hygiene practices should be observed.

**7.2. Conditions for safe storage, including any incompatibilities**

Store in sealed original container.

Store in a cool, dry place.

Keep away from heat and direct sunlight.

**7.3. Specific end use(s)**

Molding Compound

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Occupational Exposure Limits**

Silica, vitreous 60676-86-0	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Austria		0,3		
Belgium		0,1		
Denmark		0,1		0,2
Germany (AGS)		0,3 respirable aerosol		
Germany (DFG)		0,3 respirable aerosol		
Ireland		0,08		
Switzerland		0,3 respirable aerosol		
USA - NIOSH		0,05		
United Kingdom		0,08		

Titanium dioxide 13463- 67-7	Limit value - Eight hours		Limit value - Short term	
	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Belgium		10		
Denmark		6 total dust		12 total dust
France		11 inhalable aerosol		
Ireland		10 Inhalable fraction		
		4 Respirable fraction		

Latvia		10		
Poland		10		30
Singapore		10		
Spain		10 inhalable aerosol		
Sweden		5 inhalable aerosol		
Switzerland		3 respirable aerosol		
USA - OSHA		15 total dust		
United Kingdom		10 inhalable aerosol		
		4 respirable aerosol		

**Predicted No-Effect Concentration (PNEC):**

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	aqua (freshwater)					0,003 mg/L	
Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	aqua (marine water)					0,0003 mg/L	
Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	STP					10 mg/L	
Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	sediment (freshwater)				0,294 mg/kg		
Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	sediment (marine water)				0,0294 mg/kg		
Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	soil				0,237 mg/kg		
Reaction product: bisphenol-F- (epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	aqua (intermittent releases)					0,0254 mg/L	

**Derived No-Effect Level (DNEL):**

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1) 37640-57-6	Workers	inhalation	Long term exposure - systemic effects		0,07 mg/m3	
Boron zinc hydroxide oxide (B12Zn4(OH)14O15) 138265-88-0	Workers	Inhalation	Long term exposure - systemic effects		25,7 mg/m3	
Boron zinc hydroxide oxide (B12Zn4(OH)14O15) 138265-88-0	Workers	Dermal	Long term exposure - systemic effects		1814 mg/kg	
Boron zinc hydroxide oxide (B12Zn4(OH)14O15) 138265-88-0	general population	oral	Long term exposure - systemic effects		2,8 mg/kg	
Boron zinc hydroxide oxide (B12Zn4(OH)14O15) 138265-88-0	general population	Dermal	Long term exposure - systemic effects		1379 mg/kg	
Boron zinc hydroxide oxide (B12Zn4(OH)14O15) 138265-88-0	general population	Inhalation	Long term exposure - systemic effects		9,5 mg/m3	
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	Workers	Dermal	Acute/short term exposure - local effects		0,0083 mg/cm2	
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	Workers	Dermal	Long term exposure - systemic effects		104,15 mg/kg bw/day	
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	Workers	Inhalation	Long term exposure - systemic effects		29,39 mg/m3	
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	general population	Dermal	Long term exposure - systemic effects		62,5 mg/kg bw/day	
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	general population	Inhalation	Long term exposure - systemic effects		8,7 mg/m3	
Reaction product: bisphenol-F-(epichlorhydrin); epoxy resin (number average molecular weight <= 700) 9003-36-5	general population	oral	Long term exposure - systemic effects		6,25 mg/kg bw/day	

**Biological Exposure Indices:**

None

**8.2. Exposure controls:**

## Engineering controls:

In use may form flammable/explosive dust-air mixtures.

Thorough dedusting.

Avoid naked flames, sparking and sources of ignition.

Ensure good ventilation/suction at the workplace.

No further information, see section 7.

## Respiratory protection:

Do not inhale dust.

In case of insufficient ventilation, wear suitable respiratory equipment.

Depending on workplace dust concentration, wear dust filter mask with particle filter P1, P2 or P3.

Ensure adequate ventilation.

**Hand protection:**

Chemical-resistant protective gloves (EN 374).

Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):

nitrile rubber (NBR;  $\geq 0.4$  mm thickness)

Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):

nitrile rubber (NBR;  $\geq 0.4$  mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Wear refractive gloves while working with the hot melt.

**Eye protection:**

Protective goggles

Avoid eye contact.

**Skin protection:**

Wear suitable protective clothing.

Protective clothing that covers arms and legs.

**Advices to personal protection equipment:**

Do not breathe dust and vapors.

Avoid eye contact.

Wash off any dirt that gets onto the skin with lots of soap and water, skin care.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Appearance	solid material granules, tablet Golden
Odor	little intrinsic odour
Odour threshold	No data available / Not applicable
pH	No data available / Not applicable
Initial boiling point	Polymerization may occur at elevated temperature.
Flash point	Product is a solid.
Decomposition temperature	No data available / Not applicable
Vapour pressure	No data available / Not applicable
Density (20 °C (68 °F))	1,83 g/cm <sup>3</sup>
Bulk density	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Solubility (qualitative) (20 °C (68 °F); Solvent: Water)	Not miscible or difficult to mix
Solubility (qualitative) (20 °C (68 °F); Solvent: ketones)	Partially miscible
Solidification temperature	No data available / Not applicable
Melting point	No data available / Not applicable
Flammability	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Explosive limits	No data available / Not applicable
Partition coefficient: n-octanol/water	No data available / Not applicable
Evaporation rate	No data available / Not applicable
Vapor density	No data available / Not applicable
Oxidising properties	No data available / Not applicable

**9.2. Other information**

No data available / Not applicable



## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reacts with strong oxidants.

Reaction with strong acids.

Reaction with strong bases

Polymerization may occur at elevated temperature or in the presence of incompatible materials.

### 10.2. Chemical stability

Stable under recommended storage conditions.

### 10.3. Possibility of hazardous reactions

See section reactivity

### 10.4. Conditions to avoid

Danger of dust explosions.

Take measures to prevent the build-up of electrostatic charges.

No decomposition if used according to specifications.

### 10.5. Incompatible materials

See section reactivity

### 10.6. Hazardous decomposition products

Hydrocarbons

At higher temperature carbon oxides and nitrogen oxides may be generated.

Traces of

oxides of zinc

May produce fumes when heated to decomposition. Fumes may contain carbon monoxide and other toxic fumes.

See section 5.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### General toxicological information:

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

#### Oral toxicity:

May cause irritation to the digestive tract.

#### Skin irritation:

Prolonged or repeated contact may cause skin irritation.

#### Eye irritation:

Prolonged or repeated contact may cause eye irritation.

#### Sensitizing:

May cause an allergic skin reaction.

**Acute oral toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Phenol-formaldehyde polymer 9003-35-4	LD50	4.100 mg/kg	oral		rat	OECD Guideline 423 (Acute Oral toxicity)
1,3,5-triazine- 2,4,6(1H,3H,5H)-trione, compound with 1,3,5- triazine-2,4,6-triamine (1:1)	LD50	> 2.000 mg/kg	oral		rat	
37640-57-6 Boron zinc hydroxide oxide	LD50	> 10.000 mg/kg	oral			
138265-88-0 Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	LD50	> 2.000 mg/kg	oral		rat	

**Acute inhalative toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
---------------------------------	---------------	-------	-------------------------	------------------	---------	--------

**Acute dermal toxicity:**

Hazardous components CAS-No.	Value type	Value	Route of application	Exposure time	Species	Method
Boron zinc hydroxide oxide 138265-88-0	LD50	> 10.000 mg/kg	dermal		rabbit	

**Serious eye damage/irritation:**

Hazardous components CAS-No.	Result	Exposure time	Species	Method
Boron zinc hydroxide oxide 138265-88-0	Category II	24 h	rabbit	

**Reproductive toxicity:**

Hazardous substances CAS-No.	Result / Classification	Species	Exposure time	Species	Method
Boron zinc hydroxide oxide 138265-88-0	NOAEL P = 100 mg/kg	oral: gavage		rat	

**Repeated dose toxicity**

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Method
1,3,5-triazine- 2,4,6(1H,3H,5H)-trione, compound with 1,3,5- triazine-2,4,6-triamine (1:1) 37640-57-6	NOAEL=1,25 mg/kg	oral: gavage	90 ddaily	rat	

**SECTION 12: Ecological information****General ecological information:**

The mixture is classified based on the available hazard information for the ingredients as defined in the classification criteria for mixtures for each hazard class or differentiation in Annex I to Regulation 1272/2008/EC. Relevant available health/ecological information for the substances listed under Section 3 is provided in the following.

**12.1. Toxicity****Ecotoxicity:**

Do not empty into drains / surface water / ground water.

Hazardous components CAS-No.	Value type	Value	Acute Toxicity Study	Exposure time	Species	Method
1,3,5-triazine- 2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine- 2,4,6-triamine (1:1) 37640-57-6	LC50	> 10.000 mg/l	Fish	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203 (Fish, Acute Toxicity Test)
Boron zinc hydroxide oxide 138265-88-0	NOEC	0,06 mg/l	Algae	72 h	Pseudokirchnerella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
	EC50	0,47 mg/l	Algae	72 h	Pseudokirchnerella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	EC50	1,6 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	EC50	1,8 mg/l	Algae	72 h		OECD Guideline 201 (Alga, Growth Inhibition Test)
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	NOEC	0,3 mg/l	chronic Daphnia	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
1,8-Diazabicyclo[5.4.0]undec- 7-ene 6674-22-2	LC50	> 100 - 220 mg/l	Fish	96 h	Leuciscus idus	OECD Guideline 203 (Fish, Acute Toxicity Test)
1,8-Diazabicyclo[5.4.0]undec- 7-ene 6674-22-2	EC50	50 mg/l	Daphnia	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

**12.2. Persistence and degradability****Persistence and Biodegradability:**

The product is not biodegradable.

Hazardous components CAS-No.	Result	Route of application	Degradability	Method
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5		aerobic	5 %	OECD Guideline 301 F (Ready Biodegradability: Manometric Respirometry Test)
1,8-Diazabicyclo[5.4.0]undec- 7-ene 6674-22-2		aerobic	< 20 %	OECD Guideline 301 A (new version) (Ready Biodegradability: DOC Die Away Test)

**12.3. Bioaccumulative potential / 12.4. Mobility in soil****Mobility:**

Cured adhesives are immobile.

**Bioaccumulative potential:**

No data available.

**12.5. Results of PBT and vPvB assessment**

Hazardous components CAS-No.	PBT/vPvB
---------------------------------	----------

1,3,5-triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1) 37640-57-6	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Bisphenol-F epichlorhydrin resin; MW<700 9003-36-5	Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria

**12.6. Other adverse effects**

No data available.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods**

Product disposal:

Waste incineration with the approval of the responsible local authority.

Disposal of uncleaned packages:

Use packages for recycling only when totally empty.

Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

Waste code

08 04 09 waste adhesives and sealants containing organic solvents and other dangerous substances

**SECTION 14: Transport information****14.1. UN number**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.2. UN proper shipping name**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.3. Transport hazard class(es)**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.4. Packaging group**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.5. Environmental hazards**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.6. Special precautions for user**

Not hazardous according to RID, ADR, ADN, IMDG, IATA-DGR.

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

VOC content < 3 %  
(2010/75/EC)

**15.2. Chemical safety assessment**

A chemical safety assessment has not been carried out.

## SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

- H301 Toxic if swallowed.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- H411 Toxic to aquatic life with long lasting effects.

### **Further information:**

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

**Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.**