

# Safety data sheet

According to Regulation (EC) No. 1907/2006

## Cp2Mg SSG

### 1. IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND THE COMPANY/UNDERTAKING

<b>Product Identifier</b> Bis(cyclopentadienyl)magnesium	
<b>Supplier</b> Akzo Nobel Polymer Chemicals B.V. Stationsstraat 77 PO Box 247 NL-3800 AE Amersfoort The Netherlands T +31 334676767  www.akzonobel.com/polymer	
<b>E-mail address of person responsible for safety data sheet</b> RegulatoryPC@akzonobel.com	
<b>Emergency telephone</b> AkzoNobel Chemicals-Deventer-NL T +31 570 679211 F +31 570 679801	
<b>Relevant identified uses of the substance or mixture</b> Semiconductor	
<b>Date of last issue / Revision number</b> 2012/08/15 / 2.05	
<b>Chemical family</b> Metal alkyl	

### 2. HAZARDS IDENTIFICATION

Reacts violently with water, liberating extremely flammable gases. Spontaneously flammable in air. Causes severe burns.
---

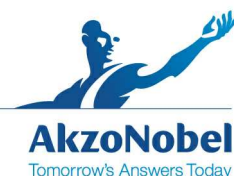
GHS classification	
Description	Applicable
Pyrophoric solid	category 1
Water contact emits flammable gases	category 1
Eye irritation	category 1
Skin corrosion/ irritation	category 1A

### Pictogram(s) (GHS)



Signal word/Hazard statement(s) GHS	
Code	Description

# Safety data sheet



According to Regulation (EC) No. 1907/2006

## Cp2Mg SSG

Signal word: DANGER	
H250.	Catches fire spontaneously if exposed to air.
H260.	In contact with water releases flammable gases which may ignite spontaneously.
H260EUH014.	Reacts violently with water.
H314.	Causes severe skin burns and eye damage.
OTIN0007.	NOTE: FOR RESEARCH AND DEVELOPMENT PURPOSE ONLY.
OTIN0008.	CAUTION: SUBSTANCE NOT YET FULLY TESTED.

Precautionary statement(s) (GHS)	
Code	Description
The precautionary statements marked with a * are mentioned on the label of the packaging of the product.	
P210.	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P222.	Do not allow contact with air.
P223.	Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231+P232.	Handle under inert gas. Protect from moisture.
P280d. *)	Wear protective gloves, eye/face protection and protective clothing. *)
P301+P330+P331.	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P334.	IF ON SKIN: Immerse in cool water/wrap in wet bandages.
P303+P361+P353.	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340.	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338.	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310. *)	Immediately call a POISON CENTER or doctor/physician. *)
P363.	Wash contaminated clothing before reuse.
P378f. *)	Use vermiculite, dry chemical powder or dry sand for extinction. *)
P402+P404.	Store in a dry place. Store in a closed container.
P422b. *)	Store contents under nitrogen. *)
P501a.	Dispose of contents and container according to local regulation.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a substance in conformance to EC directives.			
Information on hazardous ingredients			
<b>Chemical description</b> Bis(cyclopentadienyl)magnesium			
<b>Composition / information on ingredients</b>			
Number	% w/w	CAS-number	Chemical name
1	100	001284-72-6	Bis(cyclopentadienyl)magnesium

According to Regulation (EC) No. 1907/2006

## Cp2Mg SSG

Number	REACH Registration number	EC-number	Classification according to 1272/2008 as amended			Classification according to 67/548/EEC as amended
1			Pyrophoric solid	category 1	H250 H260 H314	C F R14/15 R17 R35
			Water contact emits flammable gases	category 1		
			Eye irritation	category 1		
			Skin corrosion/ irritation	category 1A		

### Other information

Technical pure substance.

## 4. FIRST AID MEASURES

### Most important symptoms and effects

Causes severe burns. Causes injury to the cornea and eyelids. Risk of serious damage to eyes. Irritating to respiratory system, may cause delayed pulmonary oedema.

### Description of first aid measures

#### General

Call a physician immediately.

#### Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Oxygen may additionally be given, by trained personnel, if it is available. Get medical attention immediately.

#### Skin

While wearing impervious gloves and air-tight safety goggles, immediately start continuous flushing of all affected areas on the victim with water for at least 15 minutes. If victim is wearing air-tight safety goggles, do not remove them. Remove contaminated clothing and shoes. If clothing is stuck to the skin after flushing with water, do not remove it. Get medical attention immediately. Wash or destroy clothing. Thoroughly clean or destroy contaminated shoes.

#### Eye

Immediately start continuous flushing of eyes with water for at least 15 minutes. If easy to do, contact lenses should be removed during the flushing, by trained personnel. Hold the eyelids apart during the flushing to ensure rinsing the entire surface of the eye and lids with water. Get medical attention immediately.

#### Ingestion

DO NOT induce vomiting. Get medical attention immediately by calling a physician or a poison control center. If victim is conscious and alert, give a cupful of water. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs, the patient should lie on their left side while vomiting to reduce the risk of aspiration.

### Indication of any immediate medical attention and special treatment needed

Persons with pre-existing skin, eye, or respiratory disease may be at increased risk from the irritant or allergic properties of this material.

Irrigate burn area with large amounts of water to decontaminate, if not already done. Chemical burns on the skin should then be treated like thermal burns. Skin reactions may take 24-48 hours to develop. If eyes are affected, flush eyes with buffered or plain irrigating solutions for at least 15 minutes, if not already done. If any ulceration or conjunctival injury is present, have an ophthalmologist examine the patient. Application of cool water helps relieve pain and swelling of both the skin and eyes. If swallowed, do not induce vomiting. Give patient plenty of water to drink. Ingestion of this corrosive material may cause severe ulceration, inflammation, and possible perforation of the gastrointestinal tract. Maintain adequate airway. Aspiration during induced emesis can result in severe lung injury. Contact a Poison Control Center for additional treatment information. Treat any additional effects symptomatically.

## 5. FIRE-FIGHTING MEASURES

### Extinguishing media

vermiculite, dry chemical powder, dry sand.

### Unsuitable extinguishing media

Never use water !!! See also Section: Other information.  
foam  
halones

According to Regulation (EC) No. 1907/2006

## Cp2Mg SSG

<p><b>Hazardous decomposition / combustion products</b> Products of complete combustion are carbon dioxide, water and magnesium oxide. Additionally, products of incomplete combustion may include carbon monoxide, elemental carbon and hydrocarbons (alkanes and alkenes).</p>
<p><b>Protective equipment</b> Firefighters must wear fire resistant protective equipment. Wear approved respirator and protective gloves.</p>
<p><b>Other information</b> Evacuate all non-essential personnel. Consider to let it burn out completely. Waterspray may only be used by experienced fire fighters. Cool closed containers with water. After a fire, ventilate thoroughly the area and soak with water, clean the walls and metallic surfaces.</p>
<p><b>Fire and explosion hazard</b> CAUTION: reignition may occur. Vapours produced by incomplete combustion may form explosive mixtures with air. In case of fire and/or explosion do not breathe fumes.</p>

### 6. ACCIDENTAL RELEASE MEASURES

<p><b>Personal precautions</b> Do not breathe dust. Avoid contact with skin and eyes. For personal protection see Section 8.</p>
<p><b>Environmental precautions</b> Do not allow to enter drains or water courses.</p>
<p><b>Methods and material for containment and cleaning up</b> Stop leakage if possible. Eliminate all sources of ignition, and do not generate flames or sparks. Allow controlled hydrolysis. Isolate spill area. After fire has been extinguished or has been allowed to burn out completely, wait CONSIDERABLE TIME (until smoke is no longer observed). After that, carefully wash spill area with a waterspray.</p>
<p><b>Other information</b> Ignition will occur. Evacuate personnel to safe area.</p>

### 7. HANDLING AND STORAGE

<p><b>Precautions for safe handling</b> When using do not eat, drink or smoke. Handle in well ventilated areas. Eliminate all sources of ignition, and do not generate flames or sparks. Avoid contact with moisture and water. Keep under nitrogen. Handle only in closed system. During sampling, disconnecting lines or opening connections, an aluminised suit should be worn. Avoid contact with skin and eyes. Avoid Incompatible materials (See Section 10).</p>
<p><b>Fire and explosion prevention</b> Spontaneously flammable in air. Avoid dust generation. Dust explosion possible in the presence of air. Use non-sparking tools in area's where explosive dust air mixtures may occur. Do not cut or weld on or near this container even when empty.</p>
<p><b>Conditions for safe storage</b> Store in accordance with local/national regulations. Keep away from food, drink and animal feedingstuffs. Keep under dry nitrogen containing less than 10 ppm oxygen. Protect product from moisture and wet air. Keep container tightly closed and in a well-ventilated place.</p>
<p><b>Other information</b> Wash hands thoroughly after handling or contact. Keep working clothing separately and do not take them home.</p>

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<p><b>Control parameters</b> Ensure good ventilation and local exhaustion of the working area.</p>				
<p><b>Personal protection</b></p> <table border="1"> <tr> <td> <p><b>Respiratory</b> In case of insufficient ventilation wear suitable respiratory equipment (respirator with Filter A/p2).</p> </td> </tr> <tr> <td> <p><b>Hand</b> impervious gloves.</p> </td> </tr> <tr> <td> <p><b>Eye</b> Safety glasses and a full face shield. A face shield is preferred over goggles.</p> </td> </tr> <tr> <td> <p><b>Skin and body</b> aluminised suit and protective boots (For further advice contact manufacturer).</p> </td> </tr> </table>	<p><b>Respiratory</b> In case of insufficient ventilation wear suitable respiratory equipment (respirator with Filter A/p2).</p>	<p><b>Hand</b> impervious gloves.</p>	<p><b>Eye</b> Safety glasses and a full face shield. A face shield is preferred over goggles.</p>	<p><b>Skin and body</b> aluminised suit and protective boots (For further advice contact manufacturer).</p>
<p><b>Respiratory</b> In case of insufficient ventilation wear suitable respiratory equipment (respirator with Filter A/p2).</p>				
<p><b>Hand</b> impervious gloves.</p>				
<p><b>Eye</b> Safety glasses and a full face shield. A face shield is preferred over goggles.</p>				
<p><b>Skin and body</b> aluminised suit and protective boots (For further advice contact manufacturer).</p>				

# Safety data sheet



According to Regulation (EC) No. 1907/2006

## Cp2Mg SSG

### Other information

Emergency-shower and facilities for rinsing eyes must be accessible. Launder clothes before reuse.

In this country no exposure limit has been established

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance</b> crystalline powder
<b>Colour</b> white
<b>Boiling point/range</b> >300°C / >572°F
<b>Melting point/freezing point</b> 176°C / 349°F
<b>Flash point</b> not applicable
<b>Flammability</b> Highly flammable. Contact with water liberates extremely flammable gases.
<b>Explosive properties</b> no
<b>Oxidising properties</b> no
<b>Vapour pressure</b> not applicable
<b>Density</b> not determined
<b>Bulk density</b> not determined
<b>Solubility in water</b> Reacts violently with water.
<b>Solubility in other solvents</b> not determined
<b>pH value</b> not applicable
<b>Partition coefficient n-octanol/water</b> not applicable
<b>Relative vapour density (air=1)</b> not applicable
<b>Viscosity</b> not applicable
<b>Non-Pyrophoric Limit</b> Non-Pyrophoric Limit : not determined
<b>Autoignition temperature</b> Spontaneously flammable in air.
<b>Upper/lower flammability or explosive limits</b> not applicable
<b>Volatile %</b> not determined

### 10. STABILITY AND REACTIVITY

# Safety data sheet



According to Regulation (EC) No. 1907/2006

## Cp2Mg SSG

<b>Conditions to avoid</b>
In order to prevent thermal decomposition do not overheat.
<b>Chemical stability</b>
Stable under recommended storage and handling conditions (see section 7).
<b>Incompatible materials</b>
Avoid contact with moisture and water, alcohols, acids, organic halides and oxygen containing compounds.
<b>Possibility of hazardous reactions</b>
Polymerization does not occur.
<b>Hazardous decomposition products</b>
Products of complete combustion are carbon dioxide, water and magnesium oxide. Additionally, products of incomplete combustion may include carbon monoxide, elemental carbon and hydrocarbons (alkanes and alkenes).

### 11. TOXICOLOGICAL INFORMATION

No experimental data are available on the substance as such.
--

### 12. ECOLOGICAL INFORMATION

No experimental ecological data are available on the substance as such.
---

### 13. DISPOSAL CONSIDERATIONS

<b>Product</b>
Refer to manufacturer/supplier for information on recovery/recycling. Waste disposal in accordance with regulations (most probably controlled incineration).
<b>Contaminated packaging</b>
According to local regulations. Emptied container might retain product residues. Follow all warnings even after the container is emptied.
<b>Other information</b>
For further advice contact manufacturer.

### 14. TRANSPORT INFORMATION

<i>Land transport</i>
<b>Transport hazard class</b>
4.2
<b>Classification Code</b>
SW
<b>RID class</b>
4.2
<b>Packing group</b>
I
<b>Hazard Identification No.</b>
X333
<b>Substance Identification No.</b>
3393
<b>UN number</b>
3393
<b>Proper Shipping Name</b>
ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC, WATER-REACTIVE ( Bis(cyclopentadienyl)magnesium )
<b>Tunnel code</b>
B/E
<b>Required labels</b>
4.2 + 4.3
<b>Subsidiary risk</b>
4.3

# Safety data sheet



According to Regulation (EC) No. 1907/2006

## Cp2Mg SSG

<i>Sea transport (IMO / IMDG-code)</i>
<b>Transport hazard class</b> 4.2
<b>Packing group</b> I
<b>UN number</b> 3393
<b>EMS</b> F-G, S-M
<b>Marine pollutant</b> no
<b>Proper Shipping Name</b> ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC, WATER-REACTIVE ( Bis(cyclopentadienyl)magnesium )
<b>Other information</b> Label(s); 4.2 + 4.3

<i>Air transport (ICAO-TI / IATA-DGR)</i>
<b>UN number</b> Forbidden

### 15. REGULATORY INFORMATION

<b>Product label name</b> Bis(cyclopentadienyl)magnesium
<b>Labelling according to EC directives</b>
<b>EC-number</b> See section 3
<b>Classification based on</b> CAUTION: SUBSTANCE NOT YET FULLY TESTED. NOTE: FOR RESEARCH AND DEVELOPMENT PURPOSE ONLY.

<b>R(isk) phrase(s) (EU classification)</b>	
<b>Code</b>	<b>Description</b>
R14/15.	Reacts violently with water, liberating extremely flammable gases.
R17.	Spontaneously flammable in air.
R35.	Causes severe burns.



<b>S(safety) phrase(s) (EU classification)</b>	
<b>Code</b>	<b>Description</b>
S06B.	Keep under nitrogen.
S16.	Keep away from sources of ignition - No smoking.
S24/25.	Avoid contact with skin and eyes.
S36/37/39.	Wear suitable protective clothing, gloves and eye/face protection.
S43B.	In case of fire, use dry chemical powder; never use water.
S45.	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

# Safety data sheet

According to Regulation (EC) No. 1907/2006

## Cp2Mg SSG

Classification according to 67/548/EC as amended

	
CORROSIVE (C)	HIGHLY FLAMMABLE (F)

### Other information

Substance and/or product listed in Directive 96/82/EC.

### German Water Hazard Class (WGK)

This product contains a substance that is not classified by the German authorities. Therefore it should be treated as classified into class WGK 3.

## 16. OTHER INFORMATION

Relevant hazard statements		
Chemical name	Hazard statement(s) (GHS-classification)	
Bis(cyclopentadienyl)magnesium	H250.	Catches fire spontaneously if exposed to air.
	H260.	In contact with water releases flammable gases which may ignite spontaneously.
	H314.	Causes severe skin burns and eye damage.

R-phrases information		
Chemical name	R(isk) phrase(s) (EU classification)	
Bis(cyclopentadienyl)magnesium	R14/15	Reacts violently with water, liberating extremely flammable gases
	R17	Spontaneously flammable in air
	R35	Causes severe burns

### History

**Date of printing/  
pdf file generated**  
2013/04/26

**Revision**  
2.05



# Safety data sheet



According to Regulation (EC) No. 1907/2006

## Cp2Mg SSG

**Composed by**

Regulatory Affairs - Europe.

Regulatory Affairs - North America, T +1-312-544-7000.

**Changes were made in section**

2, Classification (US); 5, NFPA ratings; 7, Fire and explosion hazard

This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.