

## XIBOND™ 100 series (granulate)

Version number: 2.0  
Replaces version of: 2017-03-02 (GHS 1)

Revision: 2019-12-05

### SECTION 1: Identification

#### 1.1 Product identifier

Trade name **2,5-furandione, polymer with ethenylbenzene**  
 Identification of the substance **XIBOND™ 100 series (granulate)**  
 CAS number 9011-13-6

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

Relevant identified uses Industrial use

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

Prins de Lignestraat 28  
6161 CZ Geleen  
Netherlands

Distributed by: Palmer Holland, Inc.  
25000 Country Club Blvd., Suite 444  
North Olmsted, OH 44070-5331

Telephone: +31467500010  
Website: www.polyscope.eu

Emergency Telephone No.:  
Palmer Holland: 800-635-4822  
Chemtrec: 800-424-9300

e-mail (competent person)

productstewardship@polyscope.eu

#### 1.4 Emergency telephone number

Emergency information service

+31467500010  
This number is only available during the following office hours: Mon-Fri 09:00 - 17:00

### SECTION 2: Hazard(s) identification

#### 2.1 Classification of the substance or mixture

Classification acc. to GHS

This substance does not meet the criteria for classification.

#### 2.2 Label elements

Labeling

Not required.

#### 2.3 Other hazards

Of no significance.

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.


### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

Name of substance 2,5-furandione, polymer with ethenylbenzene

Identifiers


CAS No 9011-13-6

Impurities and additives, classification acc. to GHS				
Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Styrene	CAS No 100-42-5	≤0.2	Flam. Liq. 3 / H226 Acute Tox. 4 / H332 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Repr. 2 / H361d STOT RE 1 / H372	

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Impurities and additives, classification acc. to GHS				
Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Maleic anhydride	CAS No 108-31-6	< 0.05	Acute Tox. 4 / H302 Skin Corr. 1B / H314 Eye Dam. 1 / H318 Resp. Sens. 1 / H334 Skin Sens. 1 / H317 STOT RE 1 / H372	

### SECTION 4: First-aid measures

#### 4.1 Description of first-aid measures

##### General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

##### Following inhalation

Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In all cases of doubt, or when symptoms persist, seek medical advice.

##### Following skin contact

Brush off loose particles from skin. Rinse skin with water/shower. Wash with plenty of soap and water. In all cases of doubt, or when symptoms persist, seek medical advice.

##### Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. In all cases of doubt, or when symptoms persist, seek medical advice.

##### Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

#### 4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

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

None.

### SECTION 5: Fire-fighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Water; Foam; Dry extinguishing powder; ABC-powder

##### Unsuitable extinguishing media

Water jet.

#### 5.2 Special hazards arising from the substance or mixture

Deposited combustible dust has considerable explosion potential. Vapours and fumes, released at elevated processing temperatures, may be irritating for the eyes, nose, throat and respiratory system. In case of overexposure they can cause nausea and headache.

##### Hazardous combustion products

During fire hazardous fumes/smoke could be produced.

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### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Self-contained breathing apparatus (EN 133). Standard protective clothing for firefighters.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety. Ventilate affected area. Control of dust.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases. Wear personal protective equipment/face protection.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

### 6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

Advice on how to clean up a spill

Take up mechanically.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Recommendations

- measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Take precautionary measures against static discharge. Use only in well-ventilated areas. Ground/bond container and receiving equipment.

- specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room. The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion. Spilled material creates extremely slippery conditions.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

### 7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- explosive atmospheres

Removal of dust deposits.

- flammability hazards

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge.

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- incompatible substances or mixtures  
Keep away from alkalis, oxidising substances, acids.

### Control of the effects

Protect against external exposure, such as  
High temperatures. UV-radiation/sunlight.

### Consideration of other advice

Store in a well-ventilated place. Keep container tightly closed.

- ventilation requirements  
Use local and general ventilation.

### 7.3 Specific end use(s)

There is no additional information.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### National limit values

Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m <sup>3</sup> ]	STEL [ppm]	STEL [mg/m <sup>3</sup> ]	Notation	Source
CA	particulate not otherwise regulated		OEL (AB)		10			i, particle	OHS Code
CA	particulate not otherwise regulated		OEL (AB)		3			r, particle	OHS Code
CA	particulates not otherwise classified (PNOC)		PEV/VEA		10			noAsb_less1Sil	Regulation OHS
CA	styrene, monomer	100-42-5	OEL (BC)	50		75			"BC Regulation"
CA	styrene, monomer	100-42-5	OEL (ON)	35		100			Regulation 833
CA	styrene, monomer	100-42-5	PEV/VEA	50	213	100	426		Regulation OHS
CA	Styrene, monomer (Phenylethylene; Vinyl benzene)	100-42-5	OEL (AB)	20	85	40	170		OHS Code
CA	maleic anhydride	108-31-6	OEL (AB)	0.1	0.4				OHS Code
CA	maleic anhydride	108-31-6	OEL (BC)	0.1					"BC Regulation"
CA	maleic anhydride	108-31-6	PEV/VEA	0.25	1				Regulation OHS

#### Notation

i	monomer
i	inhalable fraction
noAsb_less1	contains no asbestos and less than 1% free crystalline silica
Sil	
particle	as airborne particles
r	respirable fraction
STEL	short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

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### Relevant DNELs/DMELs/PNECs and other threshold levels

No data available.

### 8.2 Exposure controls

#### Appropriate engineering controls

Provide mechanical ventilation; in general such ventilation should be provided at compounding/converting areas and at fabricating/ filling work stations where the material is heated. Local exhaust ventilation should be used over and in the vicinity of machinery involved in handling the molten material. Emissions from ventilation or work process equipment should be checked to ensure they comply with the legal requirements.

#### Individual protection measures (personal protective equipment)

##### Eye/face protection



Use safety goggle with side protection. (EN166).  
Use heat resistant face shield when handling molten product

##### Skin protection

Protective clothing (EN 340 & EN ISO 13688).

##### - hand protection



Chemical protection gloves are suitable, which are tested according to EN 374.  
Use heat resistant gloves when handling molten product.

##### - other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

##### Respiratory protection

In case of inadequate ventilation wear respiratory protection. P2 (filters at least 94 % of airborne particles, color code: White).

##### Environmental exposure controls

Keep away from drains, surface and ground water. Emissions from ventilation or work process equipment should be checked to ensure they comply with the legal requirements.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state	solid (granulate)
Color	transparent
Odor	characteristic weak

#### Other safety parameters

pH (value)	not applicable
Melting point/freezing point	this information is not available
Initial boiling point and boiling range	not applicable
Flash point	>375 °C
Evaporation rate	not applicable

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Flammability (solid, gas)	not applicable
Explosion limits of dust clouds	not determined
Vapor pressure	not applicable
Density	1.1 – 1.2 g/cm <sup>3</sup>
Vapor density	this information is not available
Solubility(ies)	not determined

### Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	not determined
Decomposition temperature	>275 °C (Supplier)
Viscosity	not relevant (solid matter)
Explosive properties	this information is not available
Oxidizing properties	this information is not available

### 9.2 Other information

There is no additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

### 10.4 Conditions to avoid

Avoid prolonged exposure to heat or UV light since this may influence material properties. Material will burn when exposed to continuing source of ignition. When heated above decomposition temperature toxic fumes may be released.

#### Hints to prevent fire or explosion

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

### 10.5 Incompatible materials

Acids, Oxidizers, Alkalis

### 10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

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### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Classification acc. to GHS

This substance does not meet the criteria for classification.

##### Acute toxicity

Shall not be classified as acutely toxic.

##### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

##### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

##### Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

##### Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

##### Carcinogenicity

Shall not be classified as carcinogenic.

##### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

##### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

##### Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

##### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

##### Other information

Fine dust may be irritating for the skin, eyes and respiratory tract. Skin contact with molten material can cause burns.

### SECTION 12: Ecological information

#### 12.1 Toxicity

#### 12.2 Persistence and degradability

Based on previous experience, this product is non-degradable.

#### 12.3 Bioaccumulative potential

Data are not available.

#### 12.4 Mobility in soil

Data are not available.

#### 12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

#### 12.6 Other adverse effects

Data are not available.

##### Endocrine disrupting potential

The product contains low amount of a substance(s) with an endocrine disrupting potential.

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### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

#### Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

### SECTION 14: Transport information

- |  |   |
|--|---|
| <b>14.1 UN number</b>  | not subject to transport regulations                                  |
| <b>14.2 UN proper shipping name</b>  | not assigned  |
| <b>14.3 Transport hazard class(es)</b>   | not assigned  |
| <b>14.4 Packing group</b>  | not assigned  |
| <b>14.5 Environmental hazards</b>  | non-environmentally hazardous acc. to the dangerous goods regulations |
| <b>14.6 Special precautions for user</b>                                       | There is no additional information.                                   |
| <b>14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code</b> | No data available.  |

#### Information for each of the UN Model Regulations

##### **Transport information - national regulations - additional information (UN RTDG)**

not assigned

##### **International Maritime Dangerous Goods Code (IMDG)**

Not subject to IMDG.

##### **International Civil Aviation Organization (ICAO-IATA/DGR)**

Not subject to ICAO-IATA.

### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations specific for the product in question

##### **National regulations (United States)**

**Toxic Substance Control Act (TSCA)** substance is listed

##### **VOC content**

Regulated Volatile Organic Compounds (VOC-EPA): Regulated Volatile Organic Compounds (VOC-Cal ARB):

##### **Industry or sector specific available guidance(s)**

##### **NPCA-HMIS® III**

Hazardous Materials Identification System. American Coatings Association.



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Category	Rating	Description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	0	no significant risk to health
Flammability	1	material that must be preheated before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

### NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	1	material that must be preheated before ignition can occur
Health	0	material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

### National regulations (Canada)

Domestic Substances List (DSL)

Substance is listed.

### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance by the supplier.

## SECTION 16: Other information, including date of preparation or last revision

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
"BC Regulation"	OHS Regulation: Section 5.48 (British Columbia)
Acute Tox.	Acute toxicity
Cal ARB	California Air Resources Board
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EPA	Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)

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Abbr.	Descriptions of used abbreviations
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OHS Code	Occupational Health and Safety Code: Occupational exposure limits for chemical substances (Alberta)
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
Regulation 833	R.R.O. 1990, Reg. 833: Control of exposure to biological or chemical agents (Ontario)
Regulation OHS	Regulation respecting occupational health and safety: Permissible exposure values for airborne contaminants (Quebec)
Repr.	Reproductive toxicity
Resp. Sens.	Respiratory sensitization
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitization
STEL	Short-term exposure limit
STOT RE	Specific target organ toxicity - repeated exposure
TWA	Time-weighted average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

### Key literature references and sources for data

Hazardous Products Regulations (HPR).

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

### List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.

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### Disclaimer

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. The information, data and recommendations are made to the best ability and obtained from reliable sources. Completeness is not guaranteed. This MSDS is intended only as a guideline for the treatment of our products and provides no guarantee of product properties or contractual agreements. It remains the responsibility of the user to meet local and national legislation.