

## Chemical Safety Data Sheet MSDS / SDS

**STARBURST(R) (PAMAM) DENDRIMER, GENERATION 4.5**Revision Date:2026-05-31 Revision Number:1

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****Product identifier**

Product name : STARBURST(R) (PAMAM) DENDRIMER, GENERATION 4.5  
CBnumber : CB9208360  
CAS : 26937-01-9  
Synonyms : PAMAM G2, 90%;starburst(pamam)dendrimer

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

**Company Identification**

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

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**SECTION 2: Hazards identification****GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Warning

**Precautionary statements**

P501 Dispose of contents/container to.....  
P363 Wash contaminated clothing before reuse.  
P322 Specific measures (see ...on this label).  
P312 Call a POISON CENTER or doctor/physician if you feel unwell.  
P302+P352 IF ON SKIN: wash with plenty of soap and water.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Hazard statements**H312 Harmful in contact with skin

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**SECTION 3: Composition/information on ingredients**

## Substance

|              |                                                  |
|--------------|--------------------------------------------------|
| Product name | : STARBURST(R) (PAMAM) DENDRIMER, GENERATION 4.5 |
| Synonyms     | : PAMAM G2, 90%;starburst(pamam)dendrimer        |
| CAS          | : 26937-01-9                                     |
| MF           | : (C4H6O2.C2H8N2)x                               |
| MW           | : 146.19                                         |

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## SECTION 4: First aid measures

### Description of first aid measures

#### General information

No special measures required.

#### After inhalation

Supply fresh air; consult doctor in case of complaints.

#### After skin contact

Generally the product does not irritate the skin.

#### After eye contact

Rinse opened eye for several minutes under running water.

#### After swallowing

If symptoms persist consult doctor.

#### Information for doctor

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

No further relevant information available.

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

No further relevant information available.

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing agents

Use fire fighting measures that suit the environment.

A solid water stream may be inefficient.

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

No further relevant information available.

### Advice for firefighters

### Protective equipment

No special measures required.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Not required.

### Environmental precautions

Dilute with plenty of water.

### Methods and material for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

### Protective Action Criteria for Chemicals

#### PAC-1

None of the ingredients is listed.

#### PAC-2

None of the ingredients is listed.

#### PAC-3

None of the ingredients is listed.

### Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

| Protective Action Criteria for |            |  |  |
|--------------------------------|------------|--|--|
| PAC-1:                         |            |  |  |
| None of the ingredients        | is listed. |  |  |
| PAC-2:                         |            |  |  |
| None of the ingredients        | is listed. |  |  |
| PAC-3:                         |            |  |  |
| None of the ingredients        | is listed. |  |  |

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## SECTION 7: Handling and storage

## **Handling**

### **Precautions for safe handling**

No special measures required.

### **Information about protection against explosions and fires**

No special measures required.

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

## **Storage**

Store in accordance with information listed on the product insert.

### **Requirements to be met by storerooms and receptacles**

No special requirements.

### **Information about storage in one common storage facility**

Not required.

### **Further information about storage conditions**

None.

### **Specific end use(s)**

No further relevant information available.

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## **SECTION 8: Exposure controls/personal protection**

### **Additional information about design of technical systems**

No further data; see section 7.

### **Control parameters**

### **Components with limit values that require monitoring at the workplace**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

### **Additional information**

The lists that were valid during the creation were used as basis.

### **Exposure controls**

### **Personal protective equipment**

### **General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

### **Breathing equipment**

Not required.

### **Protection of hands**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

### **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

### **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

### **Eye protection**

Goggles recommended during refilling.

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## SECTION 9: Physical and chemical properties

### **Information on basic physicochemical properties**

#### **Appearance**

#### **Physical State**

Liquid

#### **Color**

Colorless

#### **Odor**

Odorless

#### **Structural Formula**

$[\text{NH}_2(\text{CH}_2)_2\text{NH}_2]_{(G=2)}; \text{dendri PAMAM}(\text{NH}_2)_{16}$

#### **Molecular Weight**

3256.2 g/mol

#### **Odor Threshold**

Not determined.

#### **Formulation**

A solution in water

**pH**

Not determined.

**Change in condition****Melting point/Melting range**

0 °C (32 °F)

**Boiling point/Boiling range**

100 °C (212 °F)

**Flash point**

52 °F

**Flammability (solid,gas)**

Not applicable.

**Decomposition temperature**

Not determined.

**Ignition temperature**

Product is not selfigniting.

**Danger of explosion**

Product does not present an explosion hazard.

**Explosion limits**

Lower: Not determined.

Upper: Not determined.

**Vapor Pressure at 20 °C (68 °F)**

23 hPa (17.3 mm Hg)

**Density at 20 °C (68 °F)**

0.99637 g/cm<sup>3</sup> (8.31471 lbs/gal)

**Relative Density**

0.791 g/mL at 25 °C

**Vapor Density**

Not determined.

**Evaporation Rate**

Not determined.

**Solubility in / Miscibility with**

Water: Soluble

### **Water**

Fully miscible.

### **Partition coefficient (n-octanol/water)**

Not determined.

### **Viscosity**

#### **Dynamic**

at 20 °C (68 °F): 0.952 mPas

#### **Kinematic**

Not determined.

### **VOC content**

0.00 % 0.0 g/l / 0.00 lb/gal

### **Solids content**

0.0 %

### **Other information**

No information available

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## SECTION 10: Stability and reactivity

### **Reactivity**

No further relevant information available.

### **Chemical stability**

#### **Thermal decomposition / conditions to be avoided**

No decomposition if used according to specifications.

#### **Possibility of hazardous reactions**

No dangerous reactions known.

#### **Conditions to avoid**

No further relevant information available.

#### **Incompatible materials**

No further relevant information available.

#### **Hazardous decomposition products**

No dangerous decomposition products known.

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

LD/LC50 values that are relevant for classification:

| Substance / Estimate          | Route  | Endpoint | Value        |
|-------------------------------|--------|----------|--------------|
| ATE (Acute Toxicity Estimate) | Dermal | LD50     | 63,328 mg/kg |

#### Primary irritant effect

##### on the skin

No irritant effect.

##### on the eye

No irritating effect.

#### Sensitization

No sensitizing effects known.

#### Additional toxicological information

The product is not subject to classification according to internally approved calculation methods for preparations

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

#### Carcinogenic categories

##### IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

##### NTP (National Toxicology Program)

None of the ingredients is listed.

##### OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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## SECTION 12: Ecological information

### Toxicity

#### Aquatic toxicity

No further relevant information available.

### **Persistence and degradability**

No further relevant information available.

### **Behavior in environmental systems**

#### **Bioaccumulative potential**

No further relevant information available.

#### **Mobility in soil**

No further relevant information available.

### **Additional ecological information**

#### **General notes**

Not hazardous for water.

### **Results of PBT and vPvB assessment**

#### **PBT**

Not applicable.

#### **vPvB**

Not applicable.

#### **PBT:**

Not applicable.

#### **vPvB:**

Not applicable.

### **Other adverse effects**

No further relevant information available.

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## **SECTION 13: Disposal considerations**

### **Waste treatment methods**

#### **Recommendation**

Smaller quantities can be disposed of with household waste.

### **Uncleaned packagings**

#### **Recommendation**

Disposal must be made according to official regulations.

### **Recommended cleansing agent**

Water, if necessary with cleansing agents.

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## SECTION 14: Transport information

### UN-Number

DOT, IMDG, IATA not regulated

### UN proper shipping name

DOT, IMDG, IATA not regulated

### Transport hazard class(es)

DOT, ADN, IMDG, IATA

Class not regulated

### Packing group

DOT, IMDG, IATA not regulated

### Environmental hazards

Not applicable.

### Special precautions for user

Not applicable.

### Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

MARPOL73/78 and the IBC Code Not applicable.

### UN "Model Regulation"

not regulated

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## SECTION 15: Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

No further relevant information available.

### Sara

|                                                 |                                    |
|-------------------------------------------------|------------------------------------|
| Section 355 (extremely hazardous substances):   | None of the ingredients is listed. |
| Section 313 (Specific toxic chemical listings): | None of the ingredients is listed. |
| TSCA (Toxic Substances Control Act):            | 7732-18-5 Water ACTIVE             |
| Hazardous Air Pollutants:                       | None of the ingredients is listed. |

### Proposition 65

|                                  |                                    |
|----------------------------------|------------------------------------|
| Chemicals known to cause cancer: | None of the ingredients is listed. |
|----------------------------------|------------------------------------|

|                                                             |                                    |
|-------------------------------------------------------------|------------------------------------|
| Chemicals known to cause reproductive toxicity for females: | None of the ingredients is listed. |
| Chemicals known to cause reproductive toxicity for males:   | None of the ingredients is listed. |
| Chemicals known to cause developmental toxicity:            | None of the ingredients is listed. |

### **Carcinogenic categories**

|                                        |                                    |
|----------------------------------------|------------------------------------|
| EPA (Environmental Protection Agency): | None of the ingredients is listed. |
|----------------------------------------|------------------------------------|

### **TLV (Threshold Limit Value)**

None of the ingredients is listed.

### **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

### **Chemical safety assessment**

A Chemical Safety Assessment has not been carried out.

## **SECTION 16: Other information**

### **Abbreviations and acronyms**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

#### **Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.