

SAFETY DATA SHEET

1. Identification of the Substance and the Company

EXPANCEL[®] Microspheres

Use of the substance: Blowing agent

Expancel

Emergency tel no: +44 1992 716052

2. Hazards Identification

The product is not classified as dangerous to health or environment according to directive 1999/45/EG and its amendments.

When stored in closed containers:

- the concentration of residual monomer in the vapour phase may reach such a level that inhalation is harmful.
- a flammable atmosphere within the containers can develop.

EXPANCEL DU can cause a dusty atmosphere / dustiness.

Observe that EXPANCEL DU must be properly handled due to risk of static electricity and dust explosion hazard.

3. Composition / Information on Ingredients

Description: Acrylic copolymer encapsulating a blowing agent.

Substance	CAS no	EINECS No	Content	Classification	Comments
<i>Blowing agent</i> - Isobutane	75-28-5	200-857-2	10–15 w-%	F+; R12	substance with a community workplace exposure limit
Copolymer	25214-39-5		>80 w-%		

4. First-Aid Measures

First aid

<i>Inhalation:</i>	Fresh air.
<i>Skin contact:</i>	Wash with soap and water.
<i>Eye contact:</i>	Flush thoroughly with water.
<i>Ingestion:</i>	Drink a glass of water.

Medical attention Professional assistance by a doctor is not needed.

5. Fire-fighting Measures

Extinguishing media: Foam, CO₂ or waterspray is recommended.

Containers close to fire should be transferred to a safe place.

Corrosive (hydrogen chloride) and toxic fumes may occur as a decomposition product in case of fire.

6. Accidental Release Measures

If material is spilled, eliminate all sources of ignition and prevent spark formation as a result of static electricity. Use respiratory mask when handling the product if dusting cannot be avoided. When handling the material, use gloves to prevent skin contact. Sweep up material.

7. Handling and Storage

HANDLING: Open container in a well ventilated area. Allow enough time to permit escape of harmful and flammable vapours before emptying. Maintain adequate ventilation when preparing mixtures and during the expansion process. The release of blowing agent is increased during expansion. Use grounded electrical equipment.

STORAGE: Store in a well ventilated area at maximum 40°C. EXPANCEL DU expands at elevated temperatures.

8. Exposure Controls / Personal Protection

Use a respiratory mask when dusting cannot be avoided. Use protective gloves when handling the product.

The release of residual monomers and propellant to the air during expansion of the product may need to be checked depending on content of product and existing ventilation.

Substance	CAS no	Content	Permissible Exposure limits
- Acrylonitrile	107-13-1	< 0,01 w-%	2 ppm
- Vinylidene chloride	75-35-4	< 1,0 w-%	5 ppm, 20 mg/m ³ (*) 2 ppm, 8 mg/m ³ (**)
- Isobutane	75-28-5	10–15 w-%	800 ppm (***)
- Total dust			15 mg/m ³

(*) Recommended limits according to ACGIH (The American Conference of Governmental Industrial Hygienists)

(**) Germany, TRGS 900, Occupational Exposure Limits

(***) Permissible exposure limit for the US.

9. Physical and Chemical Properties

<i>Appearance:</i>	Yellow/white dry powder.
<i>Odour:</i>	No particular odour.
<i>Particle size:</i>	2 – 30 µm
<i>pH:</i>	3-4, when dispersed in water
<i>Explosive properties:</i>	Dust explosion hazard. $K_{st} = 240$ [bar*m/s] MIE (Minimum Ignition Energy) = < 3 [mJ] MOC (Minimal Oxygen Concentration) = 14 vol-% Lowest explosion concentration 40 g/m ³ air
<i>Auto ignition temperature:</i>	170°C
<i>Density [kg/m³]:</i>	1200
<i>Solubility in water:</i>	Insoluble
<i>Soluble in:</i>	Dimethylacetamide, Dimethylformamide
<i>Volatile organic compound (VOC):</i>	appr 10-15 %
<i>Organic compounds:</i>	appr 100 %

10. Stability and Reactivity

The product is stable and no hazardous reaction will occur.

If the product is stored at temperatures above 50°C the release of blowing agent increases with a risk of explosive air-mixtures.

11. Toxicological Information

- Tests according to Magnusson and Kligman gave no reasons to believe that the product can cause allergy.
- LD₅₀ oral, rat; > 19 g/kg
- **Health effects:**
 - Inhalation:* Dry microspheres are dusty and may cause transient irritation in the respiratory organ. When stored in closed containers the concentration of monomers in the vapour phase may reach such a level that inhalation is harmful.
 - Skin contact:* May cause dryness.
 - Eye contact:* May cause irritation.
 - Ingestion:* No acute health effect anticipated due to chemical composition.

12. Ecological Information

- Acute toxicity LC₅₀ for goldfish at 96 hours exposition is higher than 5000 ppm. Compound can be stated as “non-toxic absolutely”.
- In test with *Pseudomonas putida*, despite maximum amount of 10 g/liter, no toxicological effect was found.
- Wassergefährdungsklasse: The material constitute a slight danger to water (WGK = 1) according to VwVwS from 17.05.1999, Kenn-Nr 766 (Kunststoff).
- The product is not biologically decomposable.

13. Disposal Considerations

The material can be incinerated. If the material is incinerated corrosive fumes (hydrogen chloride) are formed.

Follow local regulations concerning disposal.

14. Transport Information

UN No: 2211 Polymeric beads, expandable
IMDG: Class 9, pkg III EmS No: F-A S-I
ADR/RID: Class 9, pkg III
IATA-DGR: Class 9, pkg III

15. Regulatory Information

Labelling:

- R18: In use, may form flammable/explosive vapour-air mixture.
- Restricted to professional users.

The present components are listed in the following chemical inventories:

USA: TSCA
Europe: EINECS
Australia: AICS
Canada: DSL
Japan: MITI/ENCS
Korea: ECL
China: SEPA/IECSC
The Philippines: PICCS
Switzerland: SWISS

16. Other Information

Explanation of the risk phrases under item 2

R12: Extremely flammable

Changes made in this edition have been indicated by a line in the left margin.

This SDS is in accordance with regulation 1907/2006/EC.