

SAFETY DATA SHEET

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

PRODUCT NAME	LUCITE® DIAKON® ACRYLIC BEAD AND COMPOUND: METHYL ACRYLATE COPOLYMER
Product Description	Acrylic copolymer based on Polymethylmethacrylate and Methyl acrylate. This data sheet covers the following grades of LUCITE® DIAKON® acrylic bead polymers and compound, both clear and colours: CLH955 Including those with the following suffix codes: D, F, G, K, L, S, T, W, X, U1 - U8.
CAS No.	009011-87-4
Use of Substance / Preparation:	Injection moulding and extrusion.
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2. HAZARDS IDENTIFICATION

EC Classification Not Classified as Dangerous for Supply/Use.

Combustible but not readily ignited.

Bead variant may form explosible dust clouds in air. High concentrations of dust may be irritant to the respiratory tract.

Low toxicity under normal conditions of handling and use.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below.

HAZARDOUS INGREDIENT(S)	%W/W	CAS No.	EC No.	EC Classification
No classifiable hazardous ingredient(s).				

4. FIRST AID MEASURES

Inhalation	Remove patient from exposure. Obtain medical attention if ill effects occur.
Skin Contact	Wash skin with soap and water. Molten material can cause severe burns. Do NOT try to peel molten polymer from the skin. Cool rapidly with water. Obtain medical attention.
Eye Contact	Remove particles by irrigating with eye wash solution or clean water, holding the eyelids apart. Obtain medical attention.
Ingestion	Do not induce vomiting. Wash out mouth with water. Obtain medical attention if ill effects occur.
Further Medical Treatment	Symptomatic treatment and supportive therapy as indicated.

5. FIRE-FIGHTING MEASURES

Combustible but not readily ignited. Bead variant may form explosible dust clouds in air.

May decompose if heated above 280°C. Combustion or thermal decomposition will evolve toxic, irritant and flammable vapours.

Incompatible materials: None known.

Extinguishing Media Water spray, foam, dry powder or CO₂.

Fire Fighting Protective Equipment

A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Caution - spillages may be slippery. Sweep up and shovel into waste drums or plastic bags. Wash the spillage area with water.

7. HANDLING AND STORAGE

HANDLING

Avoid contact with eyes. Avoid prolonged skin contact. Avoid inhalation of high concentrations of dusts.

Process Hazards

Extra care should be taken to prevent burns from contact with hot material.

Burns are the most common injury during melt processing of thermoplastics. Take utmost care. LUCITE® DIAKON® grades can be processed safely in moulding and extrusion equipment at melt temperatures up to 280°C. The more rapid decomposition above these temperatures could cause gaseous pressure to be built up, with a risk of spraying low-viscosity polymer from the nozzle or die without any screw movement. All polymers degrade to some extent at their processing temperature, an effect which increases with increasing temperature. It is therefore impossible to be precise about which substances may be evolved. However, it is only the minor components which vary substantially. The major components are given in Section 10. Care should be taken when despruing or degating mouldings as resultant edges can be sharp and may cause cuts to skin and damage to eyes. Condensation residues that build up on and around extrusion equipment should be handled and disposed of as hazardous chemical waste. For further information refer to Thermal Processing - Hazard Advice Note TS01-05.

STORAGE

Acrylic polymers are supplied in either bags or bulk containers. Keep containers in a clean, cool and dry area away from heat sources. Natural ventilation is adequate.

Storage Temperature Specific use

Ambient.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit is not exceeded. Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

The following information is given as general guidance.

Respirators



NORMAL HANDLING A suitable dust mask or dust respirator with filter type P may be appropriate. In the unlikely event of formation of particularly high levels of dust a self contained breathing apparatus may be appropriate.

THERMAL PROCESSING: Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. A suitable mask with filter type A may be appropriate. In the unlikely event of formation of particularly high levels of vapour a self contained breathing apparatus may be appropriate.

Eye Protection



Safety spectacles/goggles/full face shield.

Gloves



NORMAL HANDLING Not normally required.

THERMAL PROCESSING: Wear thermal insulating gloves when handling hot masses.

Other

Wear suitable protective clothing. For information regarding process hazards refer to Section 7, Handling and Storage.

Occupational exposure limits

The following values apply to substances which may be evolved during thermal processing.

Substance	CAS No.	LTEL ppm (8Hr TWA)	LTEL mg/m3 (8Hr TWA)	STEL ppm	STEL mg/m3	Notes
Methyl methacrylate	000080-62-6	50	208	100	416	WEL
Methyl acrylate	000096-33-3	5	18	10	36	WEL

9. PHYSICAL AND CHEMICAL PROPERTIES

Limiting Oxygen Index (% O₂): 17.2

UL Flame Class: HB

Form	Beads, Pellets (cylinders or cubes).
Colour	Clear or coloured
Odour	Slight.
pH (Value)	Not applicable.
Boiling Point (°C)	Not applicable.
Flash Point (°C)	390
Flammable Limits	Not applicable.
Auto Ignition Temperature (°C)	465
Explosive Properties	Not applicable.
Oxidising Properties	Not applicable.
Vapour Pressure (Pascal)	Not applicable.
Solubility (Water)	Practically insoluble.
Solubility (Other)	Attacked by chlorinated aliphatic hydrocarbons, aromatic hydrocarbons, ketones, alcohols, ether and esters.
Partition Coefficient (n-Octanol/water)	Not applicable.
Viscosity (mPa.s)	Not applicable.
Vapour Density (Air=1)	Not applicable.
Specific Gravity	1.18
Softening Point (°C)	90 - 120 (Refer to grade technical data sheet for values)
Relative Evaporation Rate (Ether = 1)	Not applicable.

10. STABILITY AND REACTIVITY

Hazardous Reactions	None known.
Hazardous Decomposition Product(s)	Methyl methacrylate, Methyl acrylate, Carbon dioxide, Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Inhalation	Unlikely to be hazardous by inhalation. High concentrations of dust may be irritant to the respiratory tract. High concentrations of vapour from hot operations may be harmful, cause irritation of the respiratory tract and slight narcotic effects.
Skin Contact	Unlikely to cause skin irritation. Contains greater than 0.1% residual (Methyl methacrylate, Methyl acrylate, 2-(2H-benzotriazol-2-yl)-p-cresol). During normal handling this will not constitute a hazard. If the polymer matrix is destroyed e.g. when the product is dissolved in organic solvent, chemical residues will be released from the polymer matrix. Under these conditions, they may produce an allergic reaction in persons already sensitised.
Eye Contact	Dust may cause irritation.
Ingestion	Low oral toxicity.
Long Term Exposure	This material has been in use for many years with no evidence of adverse effects.

12. ECOLOGICAL INFORMATION

Environmental Fate and Distribution	High tonnage material produced in partially contained systems. Solid with low volatility. The product is essentially insoluble in water. The product has low potential for bioaccumulation. The product is predicted to have low mobility in soil.
Persistence and Degradation	The product is non-biodegradable in soil. There is no evidence of degradation in soil and water.
Toxicity	The product is predicted to have low toxicity to aquatic organisms.
Effect on Effluent Treatment	The material is essentially insoluble in water and can therefore be separated from aqueous medium by sedimentation and filtration processes at an effluent treatment plant.

13. DISPOSAL CONSIDERATIONS

The waste is considered to be non hazardous.

Clean scrap may be reprocessed. Incineration may be used to recover energy value. May be disposed of by landfill in accordance with local regulations. Certain packages are returnable. Please consult your local office for further details. Ensure that all packaging is disposed of safely.

14. TRANSPORT INFORMATION

Not Classified as Dangerous for Transport.

15. REGULATORY INFORMATION

EC Classification Not Classified as Dangerous for Supply/Use.

16. OTHER INFORMATION

This Safety Data Sheet was prepared in accordance with Directive 2001/58/EC.

LUCITE® and DIAKON® are Registered Trade Marks of companies within the Lucite International Limited Group of companies.

MEDICAL USE: CAUTION: DO NOT USE IN MEDICAL APPLICATIONS INVOLVING IMPLANTATION IN THE HUMAN BODY.

Lucite International has performed no clinical testing on the use of this product in any medical application. Lucite International has no data to support the use of this product in any medical application. This product was not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. Lucite International has neither sought, nor received, approval from any regulatory agency for the use of this product in implantation in the human body or in contact with internal body fluids or tissues.

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It is the responsibility of the end-product manufacturer to identify all market and use-specific regulations and to ensure compliance with these regulations.

The following sections contain revisions or new statements: 1, 7, 8, 11, 16.

GLOSSARY

Note: Not all of the following are necessarily contained in this Safety Data Sheet:

IOELV: Indicative Occupational Exposure Limit Value

WEL: Workplace Exposure Limit (UK HSE EH40)

Bmgv: Biological Monitoring Guidance Value

Sen: Capable of causing respiratory sensitisation

Sk: Can be absorbed through skin

Carc: Capable of causing cancer and/or heritable genetic damage

CHAN: Chemical Hazard Alert Notice

COM: The company aims to control exposure in its workplace to this limit

LTEL: Long Term Exposure Limit

STEL: Short Term Exposure Limit

TWA: Time Weighted Average

STOT SE: Specific Target Organ Toxicity - Single Exposure

Repr.: Reproductive toxicity

Aquatic acute/chronic: Hazardous to the aquatic environment