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

1.1 Product identifier

Trade name: K-Resin®

This safety data sheet pertains to the following products:

BK10
DK11
DK11E
KK38
KK38E
KR01
KR03
KR03E
KR03NW
KR05
KR05E
KR05NW
KR10
KR20
KR21
KR38
KR40
KR52
KR53
KR99HG
KRDEV033A
KRDEV034A
MB4000
SKR17
SKR18
SKR19
XK40
XK44

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

General use: Polymer
Basic material for chemical industry processing

1.3 Details of the supplier of the safety data sheet

Company name: INEOS Styrolution Group GmbH
Street/POB-No.: Mainzer Landstraße 50
Postal Code, city: DE-60325 Frankfurt
WWW: www.styrolution.com
E-mail: INSTY.emea@ineos.com
Department responsible for information:
Infopoint
E-mail: INSTY.emea@ineos.com

1.4 Emergency telephone number

Telephone: +44 (0) 1235 239 670

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP)

This mixture is classified as not hazardous.

2.2 Label elements

Labelling (CLP)

Hazard statements: not applicable

Precautionary statements: not applicable

2.3 Other hazards

Dust: Can cause skin, eye and respiratory tract irritation.
In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.
The melted product can cause severe burns.
Special danger of slipping by leaking/spilling product.

Results of PBT and vPvB assessment:

The product does not contain any as PBT or vPvB classified substances.

SECTION 3: Composition/information on ingredients

3.1 Substances: not applicable

3.2 Mixtures

Chemical characterisation: Polymer
(C8 H8 C4 H6)x
Styrene-butadiene-copolymer; CAS No. 9003-55-8

Hazardous ingredients:

Identifiers	Designation	Content	Classification
REACH 01-2119463273-41-xxxx EC No. 203-806-2 CAS 110-82-7	Cyclohexane	0 - 0.2 %	Flam. Liq. 2; H225. Skin Irrit. 2; H315. STOT SE 3; H336. Asp. Tox. 1; H304. Aquatic Acute 1; H400. Aquatic Chronic 1; H410.

Full text of H- and EUH-statements: see section 16.

Additional information: The maximum workplace exposure limits are, where necessary, listed in section 8. The substances are encapsulated in a polymer and are therefore not bioavailable.

SECTION 4: First aid measures

4.1 Description of first aid measures

In case of inhalation: Provide fresh air. Put victim at rest and keep warm. If you feel unwell, seek medical advice.

Following skin contact: Take off contaminated clothing and wash it before reuse.
The melted product can cause severe burns.
Do not remove the product from the skin without medical assistance.
After contact with molten product, cool skin area rapidly with cold water. Consult physician.

After eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart.
Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist in the event of irritation.

After swallowing: Do not induce vomiting. Rinse mouth with water.
Drink one or two glasses of water. Seek medical aid in case of troubles.
Never give an unconscious person anything through the mouth.

4.2 Most important symptoms and effects, both acute and delayed

Dust: Skin irritation, eye irritations and redness

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:

Water spray jet, water mist, foam.
Only in case of small fires: extinguishing powder, carbon dioxide, Sand, earth.

Extinguishing media which must not be used for safety reasons:

Full water jet

5.2 Special hazards arising from the substance or mixture

In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.
In case of fire may be liberated: Smoke, hydrocarbons, styrene-monomer, butadiene, aldehydes and acids (organic), carbon monoxide and carbon dioxide (CO2).

5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information: Hazchem-Code: -

Cool endangered containers with water spray and, if possible, remove from danger zone.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

May form explosible dust-air mixture if dispersed. Remove all sources of ignition.
Provide adequate ventilation. Do not breathe dust. Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse.
Keep unprotected people away.

6.2 Environmental precautions

Do not allow to penetrate into soil, waterbodies or drains.

6.3 Methods and material for containment and cleaning up

Avoid generation of dust. Take up mechanically. Can be reused without regeneration. Otherwise, dump or burning.

Additional information: Take precautionary measures against static discharges.

Special danger of slipping by leaking/spilling product.

6.4 Reference to other sections

Refer additionally to section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling: Provide adequate ventilation, and local exhaust as needed.
Avoid dust formation. Do not breathe dust. In the case of the formation of dust: Withdraw by suction.
Molten material: Avoid contact with the substance. When handling large quantities, supply emergency spray.
Wear appropriate protective equipment. Take off contaminated clothing and wash it before reuse.

Precautions against fire and explosion:

In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.
Take precautionary measures against static discharges. Keep away from sources of ignition. Use grounding equipment. Use explosion-proof equipment and non-sparking tools/utensils.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Store container tightly closed in a dry and cool place.
Protect against heat /sun rays.

Hints on joint storage: Do not store together with combustible or self-igniting materials or any highly flammable solids.
Further details: Special danger of slipping by leaking/spilling product.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
	K-Resin®	Great Britain: WEL-TWA Great Britain: WEL-TWA	10 mg/m³ (Dust limit value, inhalable fraction) 4 mg/m³ (Dust limit value, respirable fraction)
100-42-5	Styrene	Great Britain: WEL-STEL Great Britain: WEL-TWA	1080 mg/m³; 250 ppm 430 mg/m³; 100 ppm
106-99-0	1,3-Butadiene	Great Britain: WEL-TWA	2.2 mg/m³; 1 ppm
100-41-4	Ethylbenzene	Great Britain: WEL-STEL Great Britain: WEL-TWA	552 mg/m³; 125 ppm (may be absorbed through the skin) 441 mg/m³; 100 ppm (may be absorbed through the skin)
110-82-7	Cyclohexane	Great Britain: WEL-STEL Great Britain: WEL-TWA	1050 mg/m³; 300 ppm 350 mg/m³; 100 ppm

Additional information: The product contains very low levels of residual monomers and process chemicals (styrene, ethylbenzene and traces of butadiene) that may be evolved during thermal processing, along with possible decomposition products. As the identity and levels of these impurities evolved will depend upon the processing conditions (temperature etc.) it is the responsibility of the user to determine the adequacy of any protection or safety measures.

8.2 Exposure controls

Provide good ventilation in the work area. Additional controls are not normally necessary when handling the polymer.

Thermal extrusion: Provide local exhaust ventilation to ensure that the workplace exposure limit is not exceeded.
Use of respiratory protection may be necessary during maintenance activities.

Personal protection equipment

Occupational exposure controls

Respiratory protection: In case of dust formation:
Use filter type A-P2 according to EN 14387.

Hand protection: Protective gloves according to EN 374.
Protective gloves made of fabric or leather.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

In case of melting: Impervious heat protective gloves according to EN 407
Glove material: Leather
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to EN 166.

Body protection: Wear suitable protective clothing. Boots or safety shoes

General protection and hygiene measures:
Do not breathe dust.
Take off contaminated clothing and wash it before reuse.
When using do not eat, drink or smoke. Wash hands before breaks and after work.
When handling large quantities, supply emergency spray.

In case of dust formation: Particular danger of slipping on spilled product on the ground.

Environmental exposure controls

Refer to "6.2 Environmental precautions".

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Physical state at 20 °C and 101.3 kPa: solid Form: pellets Colour: colourless, clear up to cloudy
Odour:	weak
Odour threshold:	No data available
pH:	Not applicable
Melting point/freezing point:	not applicable
Initial boiling point and boiling range:	not applicable
Flash point/flash point range:	Not applicable
Evaporation rate:	No data available
Flammability:	No data available
Explosion limits:	LEL (Lower Explosion Limit): not applicable UEL (Upper Explosive Limit): not applicable
Vapour pressure:	No data available
Vapour density:	No data available
Density:	1.00 - 1.01 g/cm³
Water solubility:	negligible
Partition coefficient: n-octanol/water:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity, kinematic:	No data available
Explosive properties:	In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.
Oxidizing characteristics:	No data available

9.2 Other information

Additional information:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

refer to 10.3

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

In case of dust formation (Fine dust): May form explosible dust-air mixture if dispersed.

10.4 Conditions to avoid

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

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

When greatly overheated, material may release hazardous decomposition products: Monomers, hydrocarbons, gases/vapours, cyclic low molecular weight oligomers, carbon monoxide and carbon dioxide.

Thermal decomposition: No data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Toxicological effects:

The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.

Skin corrosion/irritation: Lack of data.
Dust: Can cause skin, eye and respiratory tract irritation.
Processing, thermal hazards: Vapours: Can cause skin, eye and respiratory tract irritation.

Serious eye damage/irritation: Lack of data.
Dust: Can cause skin, eye and respiratory tract irritation.
Processing, thermal hazards: Vapours: Can cause skin, eye and respiratory tract irritation.

Sensitisation to the respiratory tract: Based on available data, the classification criteria are not met.
Specific symptoms in animal studies: negative.

Skin sensitisation: Based on available data, the classification criteria are not met.
Specific symptoms in animal studies: negative.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.
Dust: Can cause skin, eye and respiratory tract irritation.
Processing, thermal hazards: Vapours: Can cause skin, eye and respiratory tract irritation.

Specific target organ toxicity (repeated exposure): Lack of data.

Aspiration hazard: Lack of data.

Other information:

When handled appropiately, even after long years of experience with this product, no adverse health effects are known.

Symptoms

Dust: Skin irritation, eye irritations and redness
The melted product can cause severe burns.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

no evidence of aquatic toxicity

12.2 Persistence and degradability

Further details:

Biodegradation: Product is not readily biodegradable.
Degradation at UV-radiation/sunlight
Environmental half-life period: >=100 days (estimated)

12.3 Bioaccumulative potential

To avoid bioaccumulation plastics should not be disposed in the sea or in other water environments.

Partition coefficient: n-octanol/water:

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

The product does not contain any as PBT or vPvB classified substances.

12.6 Other adverse effects

General information: Do not allow to enter into ground-water, surface water or drains.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number: 07 02 13 = Waste plastic

Recommendation: Recycling or special waste incineration.
After appropriate treatment the product can be remelted and reprocessed into new moulded articles.
Mechanical recycling is only possible if the material has been selectively retrieved and carefully segregated according to type.

Package

Recommendation: Dispose of waste according to applicable legislation. Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number

ADR/RID, IMDG, IATA-DGR: not applicable

14.2 UN proper shipping name

ADR/RID, IMDG, IATA-DGR: Not restricted

14.3 Transport hazard class(es)

ADR/RID, IMDG, IATA-DGR: not applicable

14.4 Packing group

ADR/RID, IMDG, IATA-DGR: not applicable

14.5 Environmental hazards

Marine pollutant: no

14.6 Special precautions for user

No dangerous good in sense of these transport regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

No data available

SECTION 15: Regulatory information

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

National regulations - Great Britain

Hazchem-Code: -

No data available

15.2 Chemical Safety Assessment

For this substance a chemical safety assessment is not required.

SECTION 16: Other information

Further information

Wording of the H-phrases under paragraph 2 and 3:

H225 = Highly flammable liquid and vapour.
H304 = May be fatal if swallowed and enters airways.
H315 = Causes skin irritation.
H336 = May cause drowsiness or dizziness.
H400 = Very toxic to aquatic life.
H410 = Very toxic to aquatic life with long lasting effects.

Abbreviations and acronyms:

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
Aquatic Acute: Hazardous to the aquatic environment - acute
Aquatic Chronic: Hazardous to the aquatic environment - chronic
AS/NZS: Australian Standards/New Zealand Standards
Asp. Tox.: Aspiration toxicity
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
CLP: Classification, Labelling and Packaging
DMEL: Derived minimal effect level
DNEL: Derived no-effect level
EC: European Community
EN: European Standard
EQ: Excepted quantities
EU: European Union
Flam. Liq.: Flammable liquid
IATA: International Air Transport Association
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
IMDG Code: International Maritime Dangerous Goods Code
LEL: Lower Explosion Limit
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
OEL: Occupational Exposure Limit Value
OSHA: Occupational Safety and Health Administration
PBT: Persistent, bioaccumulative and toxic
PNEC: Predicted no-effect concentration
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
Skin Irrit.: Skin irritation
STOT SE: Specific target organ toxicity - single exposure
TRGS: Technical Rules for Hazardous Substances
UV: Ultraviolet
vPvB: Very persistent and very bioaccumulative

Reason of change: Changes in section 1: Department responsible for information
Date of first version: 6/4/2017

Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.