



MATERIAL SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH)

1. Identification of the Substance / mixture and of the company undertaking

1.1 PRODUCT IDENTIFIER:

Product Names: Thermoplastic Road Marking Materials. (ALL GRADES)

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Identified uses: Thermoplastic Road Marking by Screed, Extrusion, Spray, Profile.
Not recommended for any other use.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Supplier Information: Kestrel Thermoplastics Ltd,
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Kilrea,
Co. Derry,
N.Ireland.
BT51 5TE.
Tel: +44 28 2954 0906
Fax:: +44 28 2954 1140
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1.4 EMERGENCY TELEPHONE NUMBER:

Office hours only:
Tel: +44 28 2954 0906

2. Hazards Identification

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Regulation (EC) No: 1272/2008

Contains: Resin acids and Rosin acids, fumarated, esters with pentaerythritol

Contains: Titanium Dioxide (TiO₂)

Carcinogenicity, Category 2 H351

Adverse physicochemical, human health and environmental effects. Suspected of causing cancer (if inhaled).

2.2 LABEL ELEMENTS

Labelling according to Regulation (EC) No: 1272/2008 [CLP]

Hazard pictograms (CLP)

GHS08



Signal word (CLP)

Warning

Hazard statements (CLP)

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer (if inhaled).

H413 May cause long lasting harmful effects to aquatic life.

Precautionary statements (CLP)

P201 Obtain special instructions before use.

P223 Avoid contact with water.

P232 Protect from moisture.

P261 Avoid breathing dust/fume.

P273 Avoid release to the environment.

P280 Wear protective gloves, protective clothing, eye protection.

P281 Use personal protective equipment as required.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P402 Store in a dry place.





2.2 LABEL ELEMENTS (contd)

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove Contact lenses, if present and easy to do. Continue rinsing.

Storage:: Not available.

Disposal Not available.

Supplemental label information None.

EC Index-No. : 022-006-002

2.3 OTHER HAZARDS

3. Composition / Information on Ingredients

General: Contains synthetic resin, highly refined mineral oil, aggregates, extenders, polymers, solid pigments and reflective glass beads (reflective grades only)

Ingredient	CAS / EC No:	Classification (EC) 1272/2008	Weight %
Resin acids and Rosin acids, fumarated, esters with pentaerythritol	CAS No: 94581-15-4 EC-No: 305-514-1	C1: H 317 Allergic Skin reaction H 319 Eye Irritation. H 413 Aquatic Hazard	0 – 20%
Titanium Dioxide	CAS No: 13463-67-7 EC-No: 236-675-5 EC Index No. 022-006-002 REACH-no 01-2119489379-17-xxxx	Carcinogenic Category C2. H351 Suspected of causing cancer (inhalation)	0 – 10%
Process Oil	CAS No: 64742-54-7 EC-No: 265-157-1	Not Classified	0 – 5%
Polymer		Not Classified	0 – 5%
Lead Free Yellow Pigment *(Yellow material only)		Not Classified	0 – 5%
Calcium Magnesium Carbonate	CAS 16389-88-1 EC-No 240-440-2	Not Classified	30 – 60%
Soda Lime Glass Beads	CAS No : 65997-17-3 EC-No: 266-046-0	Not Classified	0 – 40%

Full Details of Risk and Hazard Phrases listed in Section 16.

4. First-aid measures

4.1 DESCRIPTION OF FIRST AID MEASURES

Powder Form

Eyes: Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin: Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Inhalation: Remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a physician.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Molten Form

Eyes : Immediately flush eyes with copious amounts of sterile water to dissipate heat and minimise injury. Seek immediate medical attention showing this sheet.

Skin : Immediately immerse or flush the affected part with copious amounts of sterile





water to dissipate heat and limit injury. No attempt should be made to remove thermoplastic or any clothing that may be fused to damaged area. Seek medical attention showing this sheet.

Inhalation : In normal industrial use First Aid is not normally required for inhalation of fumes except to remove the person to fresh air.

Ingestion : Seek medical attention.

Medical Note

This composition is soluble in aromatic solvents i.e. Toluene, Xylene or in chlorinated hydrocarbon solvents – Chloroform, Dichloromethane. (Long exposure to these types of solvent is harmful.)

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

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Dusts may irritate the respiratory tract, skin and eyes. May cause an allergic skin reaction. Dermatitis. Rash.

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

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

5.1. EXTINGUISHING MEDIA:

Not classified as flammable but will support combustion. Extinguish with foam, dry powder or Carbon Dioxide. Apply extinguishing media carefully to avoid creating airborne dust. **Do not use water as an extinguisher as this will spread the fire.**

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Risk of fire and explosion if product is overheated. Molten product reacts violently with water.

Hazardous Combustion Products: Smoke, Fumes, Incomplete combustion products, Oxides of Carbon, flammable hydrocarbons.

5.3. ADVICE FOR FIREFIGHTERS

In the event of fire and/or explosion do not breathe fumes. Use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Use water spray to cool fire exposed surfaces and to protect personnel.

6. ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

For non-emergency personnel: Avoid contact with spilled material. Keep unnecessary and unprotected personnel away from the material. Do not touch or walk through spilt material. Avoid breathing dust. Wear protective clothing as described in Section 8 of this safety data sheet. Contact with hot molten material will cause severe burns.

For emergency responders:

6.2. ENVIRONMENTAL PRECAUTIONS

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Cold Powdered Product -	Sweep or vacuum clean for disposal. Avoid creating / breathing dust.
Hot Product -	Shut off source. Contain spillage. Allow to solidify. Do not allow molten material to enter into drains, sewers or water courses.
General -	Dispose of safely in accordance with local and national regulations.

6.4. REFERENCE TO OTHER SECTIONS

See Sections 8 and 13.



7. HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid elevated temperatures for prolonged periods of time. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Prevent small spills and leakage to avoid slip hazard. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Protect material from water as wet material will foam / spit if added in to molten product. Care should be taken when storing and handling this product. Apart from the specific nature of the polymer product, conditions such as humidity, sunlight and temperature have an influence on the way the product behaves during storage and handling. Special attention should be paid to avoid inappropriate stacking of palletised bags or other package units. Indeed, polymer products may be dimensionally unstable under certain conditions. Avoid conditions generating heat during transfer operations.

7.1.2. ADVICE ON GENERAL OCCUPATIONAL HYGIENE

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Individuals having sensitive skin may find it beneficial to use a barrier cream or moisturizer when excessive or prolonged contact with the skin is likely.

See also Section 8 for additional information on hygiene measures.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well ventilated area, away from incompatible materials (see section 10) and food and drink. Store under cover where possible to prevent moisture ingress into material. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3. SPECIFIC END USE(S)

Section 1.2 informs of the identified end-use as a Thermoplastic Road Marking material to be applied by Screed, Extrusion or Spray. Not recommended for any other use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

Occupational Exposure limits

Ingredient	Type	Value	Form
Titanium Dioxide (13463-67-7)	WEL TWA mg/m ³	4 mg/m ³ respirable 10 mg/m ³ total inhalable	Respirable dust

8.2. EXPOSURE CONTROLS

PROTECTIVE EQUIPMENT

ENGINEERING MEASURES

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits



8.2. EXPOSURE CONTROLS (contd)

HAND PROTECTION

Gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Individuals having sensitive skin may find it beneficial to use a barrier cream or moisturizer when excessive or prolonged contact with the skin is likely. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.



BODY PROTECTION :

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

EYE PROTECTION

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If operating conditions cause high dust concentrations to be produced, use dust goggles.



RESPIRATORY PROTECTION :

Respiratory protection:			
Device	Filter type	Condition	Standard
Dust mask	Type P2	Short term exposure, Dust protection	EN 143, EN 149

If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

OTHER PROTECTION

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

HYGIENE MEASURES

Wash at the end of each work shift and before eating, smoking and using the toilet.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance /Physical state	: Solid / Granular / Powder or Viscous Liquid
Colour	: White.
Odour	: Slight.
Odour threshold	: None.
pH	: Not applicable.
Melting point range	: 65 - 130°C.
Initial boiling point and boiling Range	: Not applicable.
Flash point (Closed Cup)	: > 230°C.
Evaporation rate	: Not applicable.
Flammability (solid, gas)	: Not applicable
Burning time	: Not applicable
Burning rate	: Not applicable.
Upper/lower flammability or explosive limits	: Not applicable.
Vapour pressure	: Not applicable.
Vapour density	: Not applicable.
Relative density	: 1.8 – 2.2 g/cm ³
Solubility(ies)	: Insoluble in water.
Partition coefficient n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: > 230°C.
Viscosity	: Not applicable.
Explosive properties	: Not applicable.
Oxidising properties	: None.

9.2. OTHER INFORMATION

Maximum Safe Heating Temperature	: 230°C.
Recommended Application Temperature	: 170 – 220°C (depends on grade)

PLEASE NOTE THAT THESE PROPERTIES DO NOT CONSTITUTE A SPECIFICATION

10. STABILITY AND REACTIVITY

10.1. REACTIVITY

Material is stable under normal storage conditions.

10.2. CHEMICAL STABILITY

No decomposition if used as directed.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS

Hazardous polymerization will not occur.

10.4. CONDITIONS TO AVOID

Avoid exposure to temperatures exceeding recommended processing conditions.
Avoid contact with moisture and water.

10.5. INCOMPATIBLE MATERIALS

Strong oxidisers

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Material does not decompose at ambient temperatures. In case of fire hazardous decomposition products may be produced such as:

Carbon Monoxide
Carbon Dioxide (CO₂)
Flammable hydrocarbons



11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

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

Titanium Dioxide (13463-67-7)

LD50 oral rat > 5000 mg/kg bodyweight (OECD 420 method)
LC50 Inhalation - Rat 3.43 - 5.09 mg/l/4h (male; (OECD 403 method))

Skin corrosion/irritation Not classified (Based on available data, the classification criteria are not met)
Additional information rabbit
(OECD 404 method)

Serious eye damage/irritation: Not classified (Based on available data, the classification criteria are not met)
Additional information: rabbit
(OECD 405 method)

Respiratory or skin sensitisation: Not classified (Based on available data, the classification criteria are not met)
Additional information: : mouse
No sensitizing effect known
(OECD 429 method)

Germ cell mutagenicity: Not classified (Based on available data, the classification criteria are not met)
Additional information: Mutagenicity tests are negative
(OECD 473 method)
(OECD 471 method)

Carcinogenicity Suspected of causing cancer (if inhaled)
Reproductive toxicity Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure Not classified (Based on available data, the classification criteria are not met)

Titanium Dioxide (13463-67-7)

NOAEL (oral, rat, 90 days)	962 - 1000 mg/kg bodyweight/day (OECD 408 method)
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Aspiration hazard Not classified (Not relevant)

INHALATION

Elevated temperatures or mechanical action may form vapours, mists or fumes which may be irritating to the eyes and respiratory tract.

INGESTION

Ingestion of powder may cause nausea, vomiting and diarrhoea.

SKIN CONTACT

Contact with hot material will cause burns.

EYE CONTACT

Dust may cause transient irritation

OTHER INFORMATION

For the product itself:

Dust may be irritating to the eyes and respiratory tract.



12. ECOLOGICAL INFORMATION

The environmental impact of this product has not been fully investigated.

12.1. TOXICITY

MATERIAL – May cause long lasting harmful effects to aquatic life.

* Estimates for product may be based on additional component data not shown.

12.2. PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be persistent.

12.3. BIOACCUMULATIVE POTENTIAL

Material -- Potential to bioaccumulate is low.

12.4. MOBILITY IN SOIL

Material -- Low solubility and floats and is expected to migrate from water to the land.

Expected to partition to sediment and wastewater solids.

12.5. PERSISTENCE, BIOACCUMULATION AND TOXICITY FOR SUBSTANCE(S)

This product is not, or does not contain, a substance that is a PBT or a vPvB.

12.6. OTHER ADVERSE EFFECTS

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected.

13. DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

13.1. WASTE TREATMENT METHODS

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

REGULATORY DISPOSAL INFORMATION

European Waste Code: 08 02 99 MFSU Other coatings wastes not otherwise specified
08 04 99 MFSU Adhesives and Sealants wastes not otherwise specified
17-02-03 Construction and Demolition Waste (Plastic)

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

PACKAGING

METHODS OF DISPOSAL : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

SPECIAL PRECAUTIONS :

This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Do NOT pour hot material down drains.



14. TRANSPORT INFORMATION

General	Does - not contain any substances classified as dangerous for transport.
Customs Classification Number:	39 111 00 0
14.1. UN number UN No. (ADR/RID/ADN)	Not applicable
14.2 UN Proper shipping name	Not applicable
14.3 Transport hazard class(es)	
ADR/RID/ADN Class	Not classified for transportation.
14.4. Packing group	Not applicable
14.5. Environmental hazards	Not applicable
14.6. Special precautions for user	Not applicable

15. REGULATORY INFORMATION

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

Applicable EU Directives and Regulations:

1907/2006 [... on the Registration, Evaluation, Authorisation and Restriction of Chemicals ... and amendments thereto]

1272/2008 [on classification, labelling and packaging of substances and mixtures.. and amendments thereto]
Refer to the relevant EU/national regulation for details of any actions or restrictions required by the above Regulation(s)/Directive(s).

15.2. CHEMICAL SAFETY ASSESSMENT

REACH Information: A Chemical Safety Assessment has not been carried out for any of the substances present in the material.



16. OTHER INFORMATION

List of abbreviations	Not available.
References	Not available
Information on evaluation method leading to the classification of mixture	Not available

Full text of H- and EUH-statements:

Care. 2	Carcinogenicity, Category 2
H351	Suspected of causing cancer.
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation.
H413	May cause long lasting harmful effects to aquatic life.

Guidance Notes:

Preventing Dermatitis at Work INDG 233
Medical aspects of occupational skin disease(MS 24)
Workplace Exposure Limits (EH 40)
The above publications are available from HMSO and HSE sources.
www.hse.gov.uk
www.opsi.gov.uk

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