



SAFETY DATA SHEET

according to Regulation (EU) No. 1907/2006

MAKROLON ET3227

Version 1.1

Revision Date 22.08.2012

Print Date 23.08.2012

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

Product identifier

Trade name : **MAKROLON ET3227**

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

Use : Production of moulded plastic articles

Details of the supplier of the safety data sheet:

Bayer MaterialScience AG
BMS-IO-S&T-PSRA-PSI Product Safety
51368 Leverkusen

Tel: +49 214 30 25026

Fax: +49 214 30 9650035

e-mail: productsafety@bayerbms.com

Emergency telephone number: In case of emergency: +49 214 30 99300 (Sicherheitszentrale Bayer)

+44 1635 563000 (Bayer plc Ltd,
Responsible Care Group, Newbury RG14 1JA, UK)

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification (1272/2008/CE):

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Classification (2006/121/EC, 1999/45/EC):

No classification according to EC Directives 2006/121/EC or 1999/45/EC.

Label elements

Labelling (1272/2008/CE):

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Labelling (2006/121/EC, 1999/45/EC):

No labelling is required for this material by the Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP 4), in accordance with EC Directives.

3. COMPOSITION/INFORMATION ON INGREDIENTS



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Type of product: Mixture

Polycarbonate based on bisphenol A

4. FIRST AID MEASURES

Description of first aid measures

In case of skin contact: CONTACT WITH THE HOT MELT: Cool immediately with plenty of water. Do not remove product crusts which may have formed neither forcibly nor by applying any solvents to the skin involved. To obtain treatment for possible burns, and appropriate skin care, seek medical advice immediately.

The following information refers to the handling of the product at room temperature. In case of skin contact wash affected areas thoroughly with soap and plenty of water.

5. Fire-fighting measures

Suitable extinguishing media: sprayed water jet, extinguishing powder, Carbon dioxide (CO₂), Foam, Dry chemical

Special hazards arising from the substance or mixture:

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes.

Advice for fire-fighters:

Firemen must wear self-contained breathing apparatus.

Do not allow contaminated extinguishing water to enter the soil, ground-water or surface waters.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: slip hazard!

Methods and material for containment and cleaning up: Use mechanical handling equipment. Avoid dust formation.

Reference to other sections: For further disposal measures see section 13.



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7. HANDLING AND STORAGE**Precautions for safe handling:**

Under recommended processing conditions small amounts of residues of monomers and residual solvent may be emitted. Provided good ventilation and/or local exhaust systems are used, the Workplace Exposure Limit(s) stated in section 8 should not be exceeded.

Dust must be removed by effective exhaust ventilation.

Keep away from foodstuffs, drinks and tobacco. Wash hands before breaks and at end of work and use skin-protecting ointment. Change contaminated clothing.

Conditions for safe storage, including any incompatibilities:

No special storage conditions required.

VCI storage class (VCI = German Association of the Chemical Industry): 11

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

The regulations for the substances listed below must be observed when processing this product, particularly if processing takes place at elevated temperatures. In our experience the provision of effective fresh-air and exhaust ventilation equipment at the points where vapors may be generated will ensure compliance with the tolerance limits quoted below.

UK Workplace Exposure Limits (WEL), per EH40 document (Health & Safety Executive). If no UK value exists, EU exposure limits given where available.

Control parameters

Substance	CAS-No.	Basis	Type	Value	Ceiling Limit Value	Remarks
phenol	108-95-2	EH40 WEL	TWA	2 ppm		
phenol	108-95-2	EH40 WEL	Skin			Dermal absorption possible
phenol	108-95-2	EU ELV	TWA	2 ppm 7.8 mg/m ³		
phenol	108-95-2	EU ELV	Skin			Dermal absorption possible
chlorobenzene	108-90-7	EH40 WEL	TWA	1 ppm		

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chlorobenzene	108-90-7	EH40 WEL	STEL	3 ppm		
chlorobenzene	108-90-7	EH40 WEL	Skin			Dermal absorption possible
chlorobenzene	108-90-7	EU ELV	TWA	5 ppm 23 mg/m ³		
chlorobenzene	108-90-7	EU ELV	STEL	15 ppm 70 mg/m ³		
2,2-Bis-(4-hydroxyphenyl)-propane (4,4'-Isopropylidenediphenol)	80-05-7	EU ELV	IOELV	10 mg/m ³		inhalable fraction
General limiting value of dust		EH40 WEL	TWA	10 mg/m ³		inhalable fraction
General limiting value of dust		EH40 WEL	TWA	4 mg/m ³		alveolar fraction

Exposure controls**Respiratory protection:**

In case of dust formation use respiratory equipment with filter type particle filter P1 according to EN 143.

Hand protection:

Suitable materials for safety gloves; EN 374:
Polyvinyl chloride - PVC (≥ 0.5 mm)
Contaminated and/or damaged gloves must be changed.

Eye protection:

Wear eye/face protection.

Skin and body protection:

Wear suitable protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Appearance:	granular
Colour:	different according to colouration
Odour:	odourless
Odour Threshold:	not established
pH:	not applicable
Softening point:	> 130 - 160 °C

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Flash point:	not established
Evaporation rate:	not established
Flammability (solid, gas):	not established
Burning number:	not established
Upper/lower flammability or explosive limits:	not applicable
Vapour pressure:	not applicable
Vapour density:	not established
Density:	ca. 1.2 - 1.4 g/cm ³
Bulk density:	600 - 700 kg/m ³
Water solubility:	practically insoluble
Surface tension:	not established
Partition coefficient (n-octanol/water):	not established
Autoignition temperature:	not applicable
Ignition temperature:	> 450 °C
Decomposition temperature:	>= 380 °C
Viscosity, dynamic:	not applicable
Explosive properties:	not established
Dust explosion class:	not established
Oxidising properties:	not established

10. STABILITY AND REACTIVITY

Chemical stability: Fumes evolved by overheating during improperly processing or by burning may be injurious to health.

Possibility of hazardous reactions: No hazardous reactions observed.

Hazardous decomposition products: Caused by smouldering and incomplete combustion toxic fumes mainly consisting of CO and CO₂ may be developed.

11. TOXICOLOGICAL INFORMATION

Under recommended processing conditions small amounts of emissions may occur.

The regulations for the substances listed below must be observed when processing this product, particularly if processing takes place at elevated temperatures.

Substance	CAS-No.	R-phrase(s)
phenol	108-95-2	R68 Possible risk of irreversible effects.

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		R23/24/25 Toxic by inhalation, in contact with skin and if swallowed. R48/20/21/22 Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. R34 Causes burns.
chlorobenzene	108-90-7	R20 Harmful by inhalation. R38 Irritating to skin.
4-tert-butylphenol	98-54-4	R36/37/38 Irritating to eyes, respiratory system and skin.
2,2-Bis-(4-hydroxyphenyl)-propane (4,4'-Isopropylidenediphenol)	80-05-7	R62 Possible risk of impaired fertility. R37 Irritating to respiratory system. R41 Risk of serious damage to eyes. R43 May cause sensitization by skin contact.

Additional information:

According to our experience and information the product has no harmful effects on health if properly handled.

12. ECOLOGICAL INFORMATION

Do not allow to escape into waterways, wastewater or soil.

Additional information on ecotoxicology:

The product is practically insoluble in water. In view of its consistency and insolubility in water, no ecological problems are to be expected if the product is properly handled. The product is not readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with applicable international, national and local laws, ordinances and statutes.

For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.

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Waste treatment methods

After containers have been emptied as thoroughly as possible (e.g. by pouring, scraping or draining until "drip-dry"), they can be sent to an appropriate collection point set up within the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

The product is suitable for mechanical recycling. After appropriate treatment it 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.

14. TRANSPORT INFORMATION**ADR/RID** Not dangerous goods**ADN** Not dangerous goods

This classification data does not apply to transportation by tanker. If required, additional information can be requested from the manufacturer.

IATA Not dangerous goods**IMDG** Not dangerous goods

Special precautions for user : Not dangerous cargo.
Keep dry.

15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Water contaminating class (Germany): nw not water endangering
(in accordance with Annex 1 to the Directive on Water-Hazardous Substances)

16. OTHER INFORMATION

The safety data sheet is also valid for corresponding MAS... types.



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Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
