



Makrolon 3638 000000

Version 2.0

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

1.1 Product identifier

MAKROLON 3638 000000

Material number: 86654598

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

Use:

Production of moulded plastic articles

1.3 Details of the supplier of the safety data sheet

Covestro Deutschland AG
COV Global Product Safety
51365 Leverkusen

Tel.: +49 214 6009 8134
Email: ProductSafetyEMLA@covestro.com

1.4 Emergency telephone number

+1-703-527-3887 (Chemtrec)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

No classification in accordance with the Regulation (EC) No. 1272/2008.

2.2 Label elements

No labeling necessary according to the Regulation (EC) No. 1272/2008.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

Type of product: Mixture

3.2 Mixtures

Polycarbonate

No dangerous ingredients according to REACH-Regulation (EC) No. 1907/2006.

Candidate List of Substances of Very High Concern for Authorisation

This product contains no substances of very high concern in concentrations where an information obligation applies (REACH Regulation (EC) No. 1907/2006, Article 59).

SECTION 4: First aid measures

4.1 Description of first aid measures

If inhaled: Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required.

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.

In case of eye contact: Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist. Remove contact lenses.

If swallowed: Rinse mouth with water. Do not induce vomiting without medical advice. If symptoms persist, call a physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing.

4.2 Most important symptoms and effects, both acute and delayed

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

4.3 Indication of any immediate medical attention and special treatment needed

Therapeutic measures: No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

Unsuitable extinguishing media: High volume water jet

5.2 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.

5.3 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Put on protective equipment (see section 8). Keep unauthorised persons away. Granules - slip hazard!

6.2 Environment related measures

Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

Use mechanical handling equipment. Avoid dust formation.

6.4 Reference to other sections

For further disposal measures see section 13.

SECTION 7: Handling and storage**7.1 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.

In case of mechanical processing, 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.

In case of release, clean up thoroughly. Clean or dispose equipment and residues properly without contaminating soil or water ways.

7.2 Conditions for safe storage, including any incompatibilities

No special storage conditions required.

Storage class (TRGS 510) : 11: Combustible Solids

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters**

Contains no substances with occupational exposure limit values.

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.

Substance	CAS-No.	Basis	Type	Value	Ceiling Limit Value	Remarks
carbolic acid	108-95-2	TRGS 900				Listed
carbolic acid	108-95-2	TRGS 900				Dermal absorption possible
carbolic acid	108-95-2	TRGS 900		2 ppm 8 mg/m ³	2	
carbolic acid	108-95-2	TRGS 900	STEL CL			Category II: substances with a resorptive effect.
carbolic acid	108-95-2	EU ELV	TWA	2 ppm 8 mg/m ³		Indicative
carbolic acid	108-95-2	EU ELV				Dermal absorption possible
carbolic acid	108-95-2	EU ELV	STEL	4 ppm 16 mg/m ³		Indicative
chlorobenzene	108-90-7	TRGS 900				Listed
chlorobenzene	108-90-7	TRGS 900		5 ppm 23 mg/m ³	2	Y

chlorobenzene	108-90-7	TRGS 900	STEL CL			Category II: substances with a resorptive effect.
chlorobenzene	108-90-7	EU ELV	TWA	5 ppm 23 mg/m3		Indicative
chlorobenzene	108-90-7	EU ELV	STEL	15 ppm 70 mg/m3		Indicative
4-tert-butylphenol	98-54-4	TRGS 900				Listed
4-tert-butylphenol	98-54-4	TRGS 900		0,08 ppm 0,5 mg/m3	2	
4-tert-butylphenol	98-54-4	TRGS 900				Dermal absorption possible
4-tert-butylphenol	98-54-4	TRGS 900	STEL CL			Category II: substances with a resorptive effect.
4,4'-isopropylidenediphenol	80-05-7	TRGS 900	STEL CL			Category I: substances for which the localized effect has an assigned OEL or for substances with a sensitizing effect in respiratory passages.
4,4'-isopropylidenediphenol	80-05-7	TRGS 900				Listed
4,4'-isopropylidenediphenol	80-05-7	TRGS 900		2 mg/m3	2.5	Y
4,4'-isopropylidenediphenol	80-05-7	EU ELV	TWA	2 mg/m3		Indicative
General limiting value of dust		TRGS 900		10 mg/m3	2	inhalable fraction
General limiting value of dust		TRGS 900		3 mg/m3	2	alveolar fraction
General limiting value of dust		TRGS 900	STEL CL			Category II: substances with a resorptive effect.

8.2 Exposure controls

Appropriate engineering controls

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.

Respiratory protection

Respiratory protection required in insufficiently ventilated working areas. 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. When handling hot material, use heat resistant gloves.

Eye protection

Safety glasses with side-shields conforming to EN166

Skin and body protection

Wear suitable protective clothing. Equipment should conform to EN 1149

Further protective measures

Wear suitable protective equipment. When using do not eat, drink or smoke. Ensure that eyewash stations and safety showers are close to the workstation location. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Use appropriate degowning techniques to remove potentially contaminated clothing. When handling hot material, wear heat-resistant protective gloves, clothing and face shield that are able to withstand the temperature of the molten product.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state: solid at 20 °C at 1.013 hPa

Appearance: granular

Colour:	natural colour
Odour:	odourless
Odour Threshold:	not established
pH:	not applicable
Softening point:	130 - 160 °C
Boiling point/boiling range:	not established
Flash point:	not established
Evaporation rate:	not established
Flammability:	not established
Burning number:	not established
Upper/lower flammability or explosive limits:	not applicable
Vapour pressure:	not applicable
Relative vapour density:	not established
Density:	ca. 1,2 - 1,4 g/cm ³
Miscibility with water:	not established
Water solubility:	practically insoluble
Surface tension:	not established
Partition coefficient (n-octanol/water):	not established
Auto-ignition temperature:	not applicable
Ignition temperature:	> 450 °C
Decomposition temperature:	>= 380 °C
Heat of combustion:	not established
Viscosity, dynamic:	not applicable
Viscosity, kinematic:	not established
Particle characteristics	
Particle size:	not established

9.2 Other information

The indicated values do not necessarily correspond to the product specification. Please refer to the product information sheet or the technical information sheet for specification data.

Explosive properties:	not established
Dust explosion class:	not established
Oxidising properties:	not established

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

The product is chemically stable. Fumes evolved by overheating during improperly processing or by burning may be injurious to health.

10.3 Possibility of hazardous reactions

No hazardous reactions observed. Stable under normal conditions.

10.4 Conditions to avoid

Avoid dust formation.

10.5 Incompatible materials

This information is not available.

10.6 Hazardous decomposition products

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

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.

carbolic acid

Index-No. 604-001-00-2

CAS-No.: 108-95-2

Classification (1272/2008/CE): Acute Tox. 3 Oral H301 Acute Tox. 3 Inhalative H331 Acute Tox. 3 Dermal H311 Skin Corr. 1B H314 Eye Dam. 1 H318 Muta. 2 H341 STOT RE 2 H373 Aquatic Chronic 2 H411

chlorobenzene

Index-No. 602-033-00-1

CAS-No.: 108-90-7

Classification (1272/2008/CE): Flam. Liq. 3 H226 Acute Tox. 4 Inhalative H332 Skin Irrit. 2 H315 Eye Irrit. 2 H319 Aquatic Chronic 2 H411

4-tert-butylphenol

Index-No. 604-090-00-8

CAS-No.: 98-54-4

Classification (1272/2008/CE): Skin Irrit. 2 H315 Eye Dam. 1 H318 Repr. 2 H361f Aquatic Chronic 1 H410

4,4'-isopropylidenediphenol

Index-No. 604-030-00-0

CAS-No.: 80-05-7

Classification (1272/2008/CE): Eye Dam. 1 H318 Skin Sens. 1 H317 Repr. 1B H360F STOT SE 3 H335 ED HH 1 EUH380 Aquatic Acute 1 H400 Aquatic Chronic 1 H410 ED ENV 1 EUH430

SECTION 11: Toxicological information

Toxicological studies on the product are not yet available.

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity, oral

No data available.

Acute toxicity, dermal

No data available.

Acute toxicity, inhalation

No data available.

Primary skin irritation

No data available.

Primary mucosae irritation

No data available.

Sensitisation

No data available.

Subacute, subchronic and prolonged toxicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity/Fertility

No data available.

Reproductive toxicity/Developmental Toxicity/Teratogenicity

No data available.

Genotoxicity in vitro

No data available.

Genotoxicity in vivo

No data available.

STOT evaluation – one-time exposure

No data available.

STOT evaluation – repeated exposure

No data available.

Aspiration toxicity

No data available.

11.2 Information on other hazards

Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Other information

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

SECTION 12: Ecological information

Ecotoxicological studies of the product are not available.

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

12.1 Toxicity

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

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.

SECTION 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.

13.1 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.

SECTION 14: Transport information**ADR/RID**

14.1 UN number or ID number	:	Not dangerous goods
14.2 UN proper shipping name	:	Not dangerous goods
14.3 Transport hazard class(es)	:	Not dangerous goods
14.4 Packing group	:	Not dangerous goods
14.5 Environmental hazards	:	Not dangerous goods

ADN

14.1 UN number or ID number	:	Not dangerous goods
14.2 UN proper shipping name	:	Not dangerous goods
14.3 Transport hazard class(es)	:	Not dangerous goods
14.4 Packing group	:	Not dangerous goods
14.5 Environmental hazards	:	Not dangerous goods

Dangerous goods classification for inland waterways tanker by request only.

IATA

14.1 UN number or ID number	:	Not dangerous goods
14.2 UN proper shipping name	:	Not dangerous goods
14.3 Transport hazard class(es)	:	Not dangerous goods
14.4 Packing group	:	Not dangerous goods
14.5 Environmental hazards	:	Not dangerous goods

IMDG

14.1 UN number or ID number	:	Not dangerous goods
14.2 UN proper shipping name	:	Not dangerous goods
14.3 Transport hazard class(es)	:	Not dangerous goods
14.4 Packing group	:	Not dangerous goods
14.5 Environmental hazards	:	Not dangerous goods

14.6 Special precautions for user

See section 6 - 8.

Additional information : Not dangerous cargo. Keep dry.

14.7 Maritime transport in bulk according to IMO instruments

Product is not transported by us in bulk.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances.

not applicable

TA Luft List (Germany)

Type: 5.2.5 Organic Substances

Fraction of other substances: 100 %

Water contaminating class (Germany)

nw non-hazardous to water

Identification number according to AwSV: 766

Synthetic Polymer Microparticles

The synthetic polymer microparticles supplied is subject to conditions laid down by entry 78 of Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council

Generic Polymer Identity: **Polyacetals, other polyethers and epoxide resins; polycarbonates, alkyd resins, polyallyl esters and other polyesters**

SPM Content (Weight %): **100 %**

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been conducted for this substance / mixture resp. its components.

SECTION 16: Other information

Full text of the hazard statements of the CLP classification (1272/2008/CE) referred to under sections 2, 3 and 10.

EUH380	May cause endocrine disruption in humans.
EUH430	May cause endocrine disruption in the environment.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H360F	May damage fertility.
H361f	Suspected of damaging fertility.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Abbreviations and acronyms

ADN	Accord européen relatif au transport international des marchandises Dangereuses par voie de Navigation intérieure
ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
ANSI	American National Standards Institute
ASTM	American Society of Testing and Materials (US)
ATE	Acute Toxic Estimate
AwSv	Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen
BCF	Bioconcentration Factor
CAS	Chemical Abstract Service
CLP	Regulation on Classification, Labelling and Packaging of Substances and Mixtures
CMR	Cancerogenic Mutagenic Reprotoxic
DIN	Deutsches Institut für Normung
DNEL	Derived No-Effect Level
EC...	Effect Concentration ... %
EWC	European Waste Catalogue
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISO	International Organization for Standardization
IUPAC	International Union of Pure and Applied Chemistry
LOAEL	Lowest Observable Adverse Effect Level
LC...	Lethal Concentration, ...%
LD...	Lethal Dose, ...%
MARPOL	International Convention for the Prevention of Pollution From Ships
NOAEL	No Observed Adverse Effect Level
NOEL/NOEC	No Observed Effect Level/Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	persistent, bioaccumulative, toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire de marchandises Dangereuses
STOT	Specific Target Organ Toxicity
TRGS	Technische Regeln für Gefahrstoffe
vPvB	very Persistent, very Bioaccumulative
WGK	Wassergefährdungsklasse

Relevant changes since the last version are highlighted in the margin. This version replaces all previous versions.

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.