Safety Data Sheet

According to 1907/2006/EC Article 31

STARCOAT PMMA CATALYST

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

1.1 Product identifier
Trade name: STARCOAT PMMA CATALYST (product code 2000422)

1.2 Relevant identified uses of the substance or mixture and uses advised against (See Section 16)
Application of the substance / the mixture Hardening agent / curing agent

1.3. Details of the supplier of the safety data sheet

Supplier

AXTER LTD, West Road, Ransomes Europark, Ipswich IP3 9SX UK
Tel: +44 (0) 1473 724056, 8.00 am to 5.30 pm, Monday to Friday
Email: info@axterltd.co.uk

1.4 Emergency telephone

+ 44 1473 724056 (NOT 24HRS - 8am - 5.30pm, Monday Friday)
In the event of a medical enquiry involving this product, please contact your doctor or local hospital accident and emergency department.

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

GHS02 flame

Org.Perox. D	H242 Heating may cause a fire..

GHSO9 Environment

Aquatic Chronic 1	H410 Very toxic to aquatic life with long lasting effects.

GHSO7

Eye Irrit. 2	H319 Causes serious eye irritation.
Skin Sens. 1	H317 May cause an allergic skin reaction

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.**Hazard pictograms**

GHS02

GHS07

GHS09

Signal word Danger

Hazard-determining components of labelling:
dicyclohexyl phthalate dibenzoyl peroxide

Hazard statements

H242	Heating may cause a fire.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H317	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P234	Keep in original container.
P273	Avoid release to the environment.
P280	Wear protective clothing / eye protection.
P370+P378	In case of fire, to extiguish use CO2, powder or water spray.
P403+P235	Store in a well-ventilated place. Keep cool.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Does not meet the PBT-criteria of Annex XIII of REACH (self assessment).

vPvB: Does not meet the vPvB-criteria of Annex XIII of REACH (self assessment).

Section 3: Composition/information on ingredients

3.2 Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:		
CAS: 94-36-0 EINECS: 202-327-6 Reg no. 01-2119511472-50	dibenzoyl peroxide Org. Perox. B, H241; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Eye Irrit. 2, H319; Skin Sens. 1, H317 Org. Perox. B, H241; Aquatic Acute 1, H400; Eye Irrit. 2, H319; Skin Sens. 1, H317	25-50%
CAS: 84-61-7 EINECS: 201-545-9 Reg no. 01-2120759933-41	Ethylene dibenzoate Aquatic Chronic 2, H411	25-50%

Additional information: For the wording of the listed risk phrases refer to section 16.

Section 4: First aid measures

4.1 Description of first aid measures

General information:

Immediately remove any clothing soiled by the product.

Take affected persons out of danger area and lie them down. If symptoms persist or if in any doubt, see a doctor. Never give anything by mouth to an unconscious person. Place them in a stable position on their side and seek medical advice.

After inhalation:

In case of unconsciousness place patient stably on their side for transportation.

Take affected persons into fresh air and keep them quiet.

Seek medical treatment.

After contact with skin:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

Remove contaminated clothing immediately.

After eye contact:

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing:

Rinse mouth with water (only if person is conscious). Do not induce vomiting; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed

Irritant to skin, eyes and respiratory system.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

CO_2, sand, extinguishing powder, foam.
Water spray

For safety reasons unsuitable extinguishing agents:

Halone
Water with full jet

5.2 Special hazards arising from the substance or mixture

In the case of decomposition without fire, there is a risk of explosion due to the resulting vapour-air mixture. Caution: reignition may occur. Decomposition under the influence of heat. Do not inhale in case of fire and/or explosion. At the temperature of self-accelerating decomposition (+55oC), the product undergoes explosive decomposition.
ATTENTION: Re-ignition possible; the product maintains combustion processes. In a fire will produce dense black smoke. Exposure to decomposition of products may cause a health hazard.
Under certain fire conditions, traces of other toxic gases cannot be excluded.
Carbon monoxide (CO) CO_2 Benzoic acid, benzene

5.3 Advice for firefighters

Protective equipment:

Do not inhale explosion gases or combustion gases.
Wear fully protective suit.
Wear self-contained respiratory protective device.

Additional information

Cool endangered receptacles with water spray.
Evacuate all non- essential persons. Extinguish a small fire with powder or carbon dioxide then apply water to prevent re-ignition.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe dust.

Keep away from ignition sources.

Avoid static electricity.
Cool case with a jet of water from a safe distance. Use respiratory protective device against the effects of fumes/dust/aerosol. Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions:

Do not allow to enter sewers/ surface or ground water.
Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up:

Do not flush with water or aqueous cleansing agents. Ensure adequate ventilation.
Send for recovery or disposal in suitable receptacles. First of all dampen with water.

6.4 Reference to other sections

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

Section 7: Handling and storage

7.1 Precautions for safe handling

Do not refill residue into storage receptacles.
Keep receptacles tightly sealed.
Store in cool, dry place in tightly closed receptacles.
Keep away from heat and direct sunlight.
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.
Restrict the quantity stored at the work place.
Handle with care. Avoid jolting, friction and impact.
Ensure good ventilation/extraction at the workplace, at least 7-fold air changes per hour.

Information about fire - and explosion protection:
Highly volatile, flammable constituents are released during processing.
Keep ignition sources away - Do not smoke.
Use explosion-proof apparatus / fittings and spark-proof tools.
Dust can combine with air to form an explosive mixture.
Substance/product oxidises when dry.

7.2 Conditions for safe storage, including any incompatibilities

Storage:
Requirements to be met by storerooms and receptacles:
Store only in the original receptacle.
Prevent any seepage into the ground.
Use only receptacles specifically permitted for this substance/product.
Store in accordance with local and national regulations.
Store in a cool location.

Information about storage in one common storage facility:
Organic peroxides shall not be parked or stored together with heavy metal compounds or amines or their preparations.

Further information about storage conditions:
Store in cool, dry conditions in well sealed
receptacles, max. storage temperature 30oC. Store receptacle in a well ventilated area.
Protect from contamination. Store in a cool place. Keep container tightly sealed.
Storage class 5.2 “Organic peroxides and self-reactive hazardous substances” according to TRGS 510.

7.3 Specific end use(s) For maximum quality store below:

No further relevant information available.

Section 8: Exposure controls/personal protection

Additional information about design of technical facilities: No further data, see item 7.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:		
94-36-0 dibenzoyl peroxide (25-50%)		
WEL	Long-term value: 5 mg/m³	
94-36-0 dibenzoyl peroxide		
Oral Dermal	DNEL (population) DNEL	1.65 mg / kg bw / day (population) 11.75 mg / m³ (Employee / Industrial / Commercial) 2.9 mg / m³ (population) 6.6 mg / kg bw / day (Employee / Industrial /Commercial) 3.3 mg / kg bw / day (population)
94-49-5 Ethylene dibenzoate		
Dermal Inhalative	DNEL (worker) DNEL (worker)	3 mg/kg bw/day (Long-term - systemic effects) 10.6 mg/m³ (Long-term - systemic effects)

PNECs		
94-36-0 dibenzoyl peroxide		
Oral	PNEC Oral PNEC PNEC	6.67 mg/kg (foodstuff) 0.0758 mg/kg (ground) 0.338 mg/kg (sediment) (fresh water) 0.35 mg/l (sewage plant) 0.0000602 mg/l (sea water) 0.000602 mg/l (fresh water)
94-49-5 Ethylene dibenzoate		
	PNEC	0.44 mg/l (ground) 2.23 mg/l (sediment) 0.00073 mg/l (seawater) 0.0073 mg/l (freshwater)

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures

Avoid contact with the eyes and skin.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Keep away from foodstuffs, beverages and food.
Do not inhale gases / fumes / aerosols.

Respiratory protection	In interiors and In case of brief exposure or low pollution use respiratory filter type A1. In case of intensive or longer exposure use self-contained respiratory protective device A2.The use of protective hoods can be recommended for longer use.
Protection of hands	Protective gloves Glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Select glove material on consideration of the penetration times, rates of diffusion and degradation. Preventive skin protection by use of skin-protecting agents is recommended. After use of gloves apply skin-cleaning agents and skin cosmetics. Check protective gloves prior to each use for their proper condition. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Material of gloves	The selection of suitable gloves depends not only on the material, but also on quality and varies from manufacturer to manufacturer.
Penetration time of glove material	Our recommendation is mainly for once-only use as a short-term protection against liquid splashes. For other applications, you should contact a glove manufacturer. The exact break through time must be found out from the manufacturer of the protective gloves and must be observed.
For permanent contact in work areas without heightened risk of injury (e.g. Laboratory), gloves made of the following material are suitable	Neoprene gloves Nitrile rubber, NBR
For permanent contact, gloves made of the following materials are suitable	Butyl rubber, BR
Not suitable are gloves made of the following material	Leather
Eye protection	Tightly sealed goggles, EN-Standard: EN 166
Body protection	Protective work clothing

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information	
Appearance:	
Form:	Powder
Colour:	White
Odour:	Weak
Odour threshold:	Not determined
pH-value:	7
Change in condition	
Melting point/Melting range:	58 °C
Boiling point/Boiling range:	Not applicable (decompose)
Flash point:	Not applicable
Flammability (solid, gas):	Decomposition products may be flammable. May cause fire.
Decomposition temperature	SADT - (Self Accelerating Decomposition Temperature) is the lowest temperature at which self accelerating decomposition may occur in the transport packaging. A dangerous self-accelerating decomposition reaction under unfavourable conditions, explosions or fire may be caused by thermal decomposition at or above the SADT. Contact with incompatible substances may also cause decomposition below the SADT. Temperature of self-accelerating decomposition (SADT): 55°C
Auto-ignition temperature:	Decomposing product(s) may be flammable
Explosive properties:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapour pressure:	Not applicable
Density:	Not determined
Bulk density:	640 kg/m^3
Relative density:	Not applicable
Evaporation rate	Not applicable
Solubility in / Miscibility with water:	Not miscible or difficult to mix.
Partition coefficient (n-octanol/water):	log POW 3.2 at 22°C (OECD 107)
Viscosity:	
Dynamic:	Not determined
Kinematic:	Not applicable

9.2 Other information Active oxygen 3.24 - 3.47%

Section 10: Stability and reactivity

10.1 Reactivity see Section 10.2

10.2 Chemical stability
Thermal decomposition / conditions to be avoided:
SADT - (Self accelerating decomposition temperature) is the lowest temperature in the self-accelerating decomposition may occur in the transport packaging. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at or above the indicated temperature: 55 °C. Contact with incompatible substances can cause decomposition at or below the SADT 55 °C.
To avoid thermal decomposition do not overheat.
Avoid friction, heat, sparks, static electricity.

10.3 Possibility of hazardous reactions
Reacts with alkali, amines and strong acids.
Reacts with certain metals.

10.4 Conditions to avoid Shock, avoid friction, heat, sparks, static electricity.

10.5 Incompatible materials:
Avoid contact with rust, iron and copper. Hazardous decomposition on contact with incompatible materials such as acids, alkalis, heavy metals and reducing agents. Do not mix with peroxide accelerators. Only use stainless steel according to DIN 1.4571, PVC, polyethylene, or glass-lined equipment.

10.6 Hazardous decomposition products:
In case of fire, see section 5.

Additional information: Emergency procedures will vary depending on individual circumstances.
The customer should have a contingency plan available in the workplace.

Section 11: Toxicological information

11.1 Information on toxicological effects There were no toxicological findings to the mixture.
Acute toxicity

LD/LC50 values relevant for classification:		
94-36-0 dibenzoyl peroxide)		
Oral Inhalative	LD50 LC50	> 2000 mg/kg (mouse) > 24,300 mg/l (rat) (dust)
94-49-5 Ethylene dibenzoate		
Oral	LD50	>2000 mg/kg (rat) (OECD 423)

Primary irritant effect:
on the skin: irritability
on the eye: causes serious eye irritation
Sensitization: may cause an allergic skin reaction

Subacute to chronic toxicity:		
94-36-0 dibenzoyl peroxide		
Oral	NOAEL NOAEL/29d	200 mg/kg/d (rat) adverse effect observed 500 mg/kg/d (unknown) Concentration at which no adverse effect was observed. 1000 mg/kg/d (unknown) Concentration at which no detrimental effect was observed
Repeated dose toxicity	**94-49-5 Ethylene dibenzoate**	
Oral	LOAEL/92d	1000 mg / kg /(rat) (OECD 422)

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.

Reproductive toxicity Based on available data, the classification criteria are not met.

STOT-single exposure Based on available data, the classification criteria are not met.

STOT-repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Based on available data, the classification criteria are not met

Section 12: Ecological information

12.1 Toxicity

94-49-5 Ethylene dibenzoate	
EC50/3h (static)	>1,280 mg/l (activated sludge) (OECD 209)
EC50/21d	1.4 mg/l (daphnia magna) (OECD 211)
EC50/21d (static)	0.79 mg/l (daphnia magna) (OECD 211)
Aquatic toxicity	**94-36-0 dibenzoyl peroxide**
EC50 EC50/48h LC50/96h NOEC/72h EC50/72h NOEC	35 mg/l (bacteria) (breath inhibition test for activated sludge) 0.5h 0.11 mg/l (daphnia magna) (OECD 202) 0.06 mg/l (fish) 0.02 mg/l (Pseudokirchneriella subcapitata) (OECD 201) 0.0711 mg/l (Pseudokirchneriella subcapitata) (OECD 201) 0.077 mg/l (daphnia magna) (OECD 202); 48h; 0.0316 mg/l (Rainbow trout) OECD 203; 96h
Aquatic toxicity	**94-49-5 Ethylene dibenzoate**
LC50/96h (static) ErC50/72h (static) NOEC/72h (static) NOES/21d (static) NOEC (static)	>0.434 mg/l (Danio rerio) (Acute toxicity to fish) >0.87 mg/l (Pseudokirchneriella subcapitata) (OECD 201) 0.045 mg/l (Pseudokirchneriella subcapitata) (OECD 201) 0.65 mg/l (daphnia magna) (OECD 211) 0.073 mg/l (Danio rerio) (OECD 210)

12.2 Persistence and degradability

Ethylene glycol dibenzoate. Biodegradability: Type of test: closed bottle test. Biological degradation: 81% Exposure time: 28d; Method: OECD test guideline 301D; GLP: yes; Easily biodegradable.
Dibenzoyl peroxide Biodegradability: Result: potentially biodegradable.

12.3 Bioaccumulative potential Bioaccumulation is not expected.

12.4 Mobility in soil Dibenzoyl peroxide: log Koc: 6310 (22°C)
Ecotoxical effects:
Note: very toxic to aquatic organisms. Very toxic for fish

Additional ecological information:
General notes:
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
Do not allow product to reach ground water, water course or sewage system.
Also poisonous for fish and plankton. Very toxic for aquatic organisms

12.5 Results of PBT and vPvB assessment
PBT: Does not meet the PBT-criteria of Annex XIII of REACH (self assessment).
vPvB: Does not meet the vPvB-criteria of Annex XIII of REACH (self assessment).

12.6 Other adverse effects No further relevant information available.

Section 13: Disposal considerations

13.1 Waste treatment methods
Hazardous waste according to Waste Catalogue (EW C). If recycling is not possible, waste must be removed in compliance with local regulations.

Recommendation
Must be specially treated in compliance with official regulations.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

European waste catalogue:
16 00 00 WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 09 00 Oxidising substances
16 09 03* peroxides, for example hydrogen peroxide

Unclean packaging:
Recommendation:
Packaging must be emptied of all residues and must be disposed of properly in accordance with the statutory provisions. Packaging that has not been completely emptied must be disposed of in coordination with the regional disposal company.
Disposal must be made in accordance with official regulations.

Section 14: Transport information

14.1 UN-Number

ADR, IMDG, IATA	UN3106

14.2 UN proper shipping name

ADR	3106 ORGANIC PEROXIDE TYPE D, SOLID (dibenzoyl peroxide)
IMDG	ORGANIC PEROXIDE TYPE D, SOLID (dibenzoyl peroxide), MARINE POLLUTANT
IATA	ORGANIC PEROXIDE TYPE D, SOLID (dibenzoyl peroxide)

14.3 Transport hazard class(es)

ADR, IATA

Class	5.2 organic peroxides.
Label	5.2

IMDG

Class	5.2 Organic peroxides.
Label	5.2

IATA

Class	5.2 Organic peroxides.
Label	5.2

14.4 Packing group

ADR , IMDG, IATA	Void

14.5 Environmental hazards:

Marine pollutant:	Yes - Symbol (fish and tree)
Special marking (ADR):	Symbol (fish and tree)

14.6 Special precautions for user	Warning: Organic Peroxides.
Hazard identification no. (Kemler code)	-
EMS Number:	F-J,S-R
Stowage category:	D
Stowage code:	SW1 protected from sources of heat
Segregation code:	SG35 Stow ‘separated from’ acids SG36 Stow ‘separated from’ alkalis SG72 See 7.2.6.3.2

14.7 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code Not applicable

Transport/Additional information

ADR

Limited Quantities (LQ)	500g
Excepted Quantities (LQ)	Code: E0 Not permitted as Excepted Quantity
Transport category	2
Tunnel restriction code	D

ADR

Limited Quantities (LQ)	500g
Excepted Quantities (LQ)	Code: E0
UN "Model Regulation":	UN 3106, ORGANIC PEROXIDE TYPE D, SOLID (DIBENZOYL PEROXIDE) 5.2

Section 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Directive 2012/18/EU
Named dangerous substances ANNEX I None of the ingredients is listed.
Seveso Category P6b SELF-REACTIVE SUBSTANCES & MIXTURES & ORGANIC PEROXIDES
E1 Hazardous to the Aquatic Enviornment
Qualifying quantity (tonnes) for the application of lower tier requirements 50t
Qualifying quantity (tonnes) for the application of upper tier requirements 200 t

National regulations:
Information about limitation of use:
Employment restrictions under the Maternity Protection Directive (94/33/EC).
Employment restrictions for maternity Directive (92/85/EEC) for expectant and nursing mothers.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

Section 16: Other information

These figures relate to the product as delivered.

Sector of Use
Relevant identified uses of the mixture

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU19 Building and construction work
SU22 Professional uses: public domain (administration, education, entertainment, services, craftsmen)

Uses advised against
SU21 Consumer uses: Private households/general public/consumers.
This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases:

H241	Heating may cause a fire or explosion
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Harmful to aquatic life with long lasting effects

Training hints
Instruction about hazards, precautions and handling must take place before the product is used and at least annually thereafter.

Department issuing MSDS: Division product safety

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organization
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative
Org. Perox. B: Organic Peroxides, Type B
Org. Perox. D: Organic Peroxides, Types C, D
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Skin Sens. 1: Skin Sensitisation - Category 1
Aquatic Acute 1: Hazardous to the aquatic environment – Acute Aquatic Hazard, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard, Category 1

Sources
www.gestis.de
www.echa.eu
logkow.cisti.nrc.ca

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