

SAFETY DATA SHEET

1. IDENTIFICATION OF THE PREPARATION AND COMPANY

Product Name and/or Code: **ANDONOX PDM-28**

Intended use: Initiator for unsaturated polyester resin.

Name and address of the company: Syrgis Performance Initiators AB
Box 26083
SE-100 41 Stockholm
Sweden

Telephone: +46 8 545 121 60

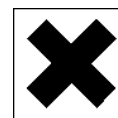
In case of an emergency: contact Centre tel. +46 8 33 70 43 or National Poison Centre.

2. HAZARDS IDENTIFICATION OF THE PREPARATION

Danger classification: O = Oxidising
Xn = Harmful



O



Xn

May cause fire. Harmful if swallowed. Irritating to eyes and skin. Harmful: may cause lung damage if swallowed.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	EINECS-no	CAS-no	Conc.%	Symbol/R-phrases
Tert-Butyl Perbenzoate	210-382-2	614-45-9	70-90	O, Xn / 8, 22, 36/38, 44
Acetyl acetone peroxide	253-384-9	37187-22-7	5-10	Xi / 5, 8, 36/38
Proprietary Phlegmatizer		872-50-4	10-15	Xi / 36/38

For the full R-phrases see section 16.

4. FIRST AID MEASURES

General:

In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation:

Remove to fresh air, keep patient warm and at rest, if breathing is irregular or stopped, administer artificial respiration. Give nothing by mouth. If unconscious, place in recovery position and seek medical advice.

Skin contact:

Remove contaminated clothing. Wash skin thoroughly with soap and water.

Eye contact:

Irrigate copiously with clean, fresh water for at least 15 minutes holding the eyelids apart and seek medical advice if necessary.

Ingestion:

If accidentally swallowed obtain immediate medical attention. Keep at rest. Drink large quantities of water or milk. Do NOT induce vomiting.

5. FIRE-FIGHTING MEASURES

Flash point:

About 70 °C

Autoignition point:

Not applicable

Fire-fighting:

Water from a safe distance – preferably with a fog nozzle. In case of small fires, other means such as carbon dioxide, foam or dry chemical extinguishers may be effective. In case of fire near storage area, cool the containers with water spray. Dry chemical combined with the product, may re-ignite. Light water additives may be particularly effective at extinguishing fires.

Major decomposition products: See section 10.

6. ACCIDENTAL RELEASE MEASURES

Avoid sources of ignition and ventilate the area. Absorb the leak with an inert, non-combustible absorbent material, e.g. sand, earth, perlite or vermiculite. Transfer the material into a clean approved container for proper disposal. Wet the material with water. Wash the contaminated zone. Dike to prevent runoff from entering drains, sewers, streams etc. Avoid skin and eye contact. Wear personal protection equipment recommended in section 8. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations.

7. HANDLING AND STORAGE

Handling:

Provide adequate ventilation. Keep containers tightly closed when not in use. Do not use near food or drink. Avoid skin and eye contact. Avoid breathing vapours. Wear personal protection equipment recommended in section 8. Isolate from sources of heat, sparks and open flame. No sparking tools should be used. Preparation may charge electrostatically: always use earthing leads when transferring from one container to another. Dilution is not recommended. Never dilute with acetone.

Storage:

Store in accordance with local regulations. Store in original package, in cool, well ventilated place away from sources of heat, fires, sparks and direct sunlight. For maximum shelf life we recommend to store the

product at temperatures not higher than 25°C. At higher temperatures the shelf life will be reduced. For safety reasons the storage temperature should not exceed 35°C. The product should not be stored below 0°C. The product must never be stored together with accelerators such as dryers, heavy metal compounds etc. Avoid contact with rust. Keep away from sources of ignition. Keep away from oxidising agents, from strongly alkaline and strongly acid materials. Rotate stock using the oldest material first. Prevent unauthorised access.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Respiratory protection: Gas mask with filter A (brown, organic substances) may be necessary.
Ventilation: Mechanical, general.
Eye protection: Safety goggles recommended.
Hand protection: Protective gloves recommended (solvent resistant, butylrubber or neoprene).
Other: None.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Flash point (°C)	> 60 Method: seta Flash
Viscosity at 20°C (mPas)	2 – 5
Active oxygen (%)	> 6.4
Density at 20°C (g/cm³)	1.01 – 1.04
Colour	Colourless to slightly yellow
Solubility in water	Slightly

10. STABILITY AND REACTIVITY

Stability:

Stable when kept in original, closed container, out of direct sunlight at temperatures below 35°C. Decomposition of product due to heat or contamination may lead to fire or strong explosions.

Conditions to avoid:

Storage in direct sunlight or elevated temperatures. Prevent product contamination.

Materials and conditions to avoid:

Violent reactions can occur if the product comes in contact with cobalt accelerators or other peroxide accelerators /promoters, rust, heavy metal compounds, brass, galvanized steel, acetone, reducing or oxidizing agents and strong acids or bases. Therefore these materials must be avoided. Grinding dust and dirt must be avoided as well. Avoid higher temperatures and direct sunlight. Confinement in stainless steel equipments (tanks, vessels, pipes etc) must also be avoided.

Major decomposition products:

Carbon dioxide, benzoic acid, acetone, tert-butanol, water, carbon monoxide, methane, ethane, acetylacetone etc.

11. TOXICOLOGICAL INFORMATION

There is no data on the preparation itself.

Acute effects:

Harmful if swallowed, inhaled or absorbed through skin. Vapour or mist is irritating to eyes, mucous membranes and upper respiratory tract. Causes skin irritation. Exposure can cause nausea, headache and vomiting.

Acute toxic effects LD₅₀ /LC₅₀ values:

Component / CAS-no	Method	Exposure	Result	Species	Source
Proprietary Phlegmatizer / 872-50-4	LD50	Oral	3914mg/kg	Rat	Literature
Proprietary Phlegmatizer / 872-50-4	LD50	Dermal	8000mg/kg	Rabbit	Literature
TBPB / 614-45-9	LD50	Oral	914mg/kg	Mouse	TPKVAL 10,55,1968
TBPB / 614-45-9	LD50	Oral	1012mg/kg	Rat	85GMAT -,30,1982

Tert-Butyl Perbenzoate 98%:

Harmful if swallowed, inhaled or absorbed through skin. Vapour or mist is irritating to eyes, mucous membranes and upper respiratory tract. Causes skin irritation. Exposure can cause nausea, headache and vomiting.

Skin and eye irritation data:

Component / CAS-no	Method	Exposure	Result	Species	Source
TBPB / 614-45-9		Skin	500mg/24H	Rabbit	85JCAE -,381,1986
TBPB / 614-45-9		Eye	100mg/1M rinse	Rabbit	ZAARAM 8,25,1958
TBPB / 614-45-9		Eye	500mg/24H	Rabbit	85JCAE -,381,1986

Tumorigenic Data:

Component / CAS-no	Method	Result	Species	Source
Proprietary Phlegmatizer / 872-50-4	Ames-test	Not tumorigenic		Literature
Proprietary Phlegmatizer / 872-50-4	Inhalation on rat	Not tumorigenic	Rat	Literature

Tert-Butyl Perbenzoate 98%:

Unreported Route—Mouse TDLo: 311 mg/kg; Tumorigenic(Equivocal tumorigenic agent by RTECS criteria); Blood(Lymphoma, including Hodgkin's disease) .

Chronic effects(Tert-Butyl Perbenzoate 98%):

Laboratory experiments have shown mutagenic effects. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

There are no data available on the preparation itself. The product should be prevented from entering drains, sewers, streams, etc.

tert-Butyl Perbenzoate 98% (TBPB):

<i>Biological degradability:</i>	72% after 28d (closed bottle test)
<i>Partition coeff of K_{ow} :</i>	750 ($\log P_{ow} = 2.9$)
<i>Bioconcentration factor(BCF):</i>	93.
<i>Acute toxicity (aquatic):</i>	Fish (poecilia reticulata). LC_{50} (96h) = 8.6 mg/l. EECI/OECD 203 NOEC (96h) = 4.6 mg/l

K_{ow} and BCF indicates that TBPB has low mobility in soil and bioconcentration in aquatic organisms is moderate.

Proprietary Phlegmatizer / CAS no 872-50-4:

<i>Biological degradability(BOD):</i>	73% of ThOD (28 days). Literature
<i>Partition coeff of $\log K_{ow}$:</i>	-
<i>Bioconcentration factor(BCF):</i>	-
<i>Acute toxicity (aquatic):</i>	Bacteria (Daphnia magna) NOEC = 5000mg/l. Algae (Scenedesmus quadr) NOEC = 5000 mg/l

13. DISPOSAL CONSIDERATIONS

Do not allow into drains or watercourses. Water and emptied containers should be handled according to local regulations.

The producer recommends destruction of both peroxide rests and empty packaging by combustion under controlled forms.

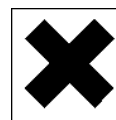
14. TRANSPORT INFORMATION

Proper Shipping Name: Organic peroxide type C, liquid (tert-Butyl peroxybenzoate)	
UN 3103	Class: 5.2
	Label: 5.2
	Packaging group: II
Marine pollutant: No	EmS: F-J, S-R

15. REGULATORY INFORMATION



O



Xn

Danger classification: O = Oxidising
Xn = Harmful

Contains: Tertiary-Butyl Peroxybenzoate
Acetylacetone peroxide

R phrases:

R-7 May cause fire.
R-22 Harmful if swallowed.
R-36/38 Irritating to eyes and skin.
R-65 Harmful: may cause lung damage if swallowed.

S phrases:

S-3/7 Keep container tightly closed in a cool place.
S-26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S-36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S-50 Do not mix with accelerators, reducing agents, strong acids, alkalis and heavy metal compounds.
S-62 If swallowed, do not induce vomiting: seek medical advice and show this container or label.

The following chemicals are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent</u>
None		

Status of Carcinogenicity:
Not recognized as a carcinogen by the IARC, NTP or OSHA.

16. OTHER INFORMATION

In addition from section 2:

Tert-Butyl Perbenzoate. Symbol O, Xn
R-8 Contact with combustible material may cause fire.
R-22 Harmful if swallowed.
R-36/38 Irritating to eyes and skin.
R-44 Risk of explosion if heated under confinement.

Acetyl acetone peroxide. Symbol O, Xi

R-5 Heating may cause an explosion.

R-8 Contact with combustible material may cause fire.

R-36/38 Irritating to eyes and skin.

R-44 Risk of explosion if heated under confinement.

Proprietary Phlegmatizer. Symbol Xi.

R-36/38 Irritating to eyes and skin.

This product is produced in Sweden.