

SAFETY DATA SHEET

1. IDENTIFICATION OF THE PREPARATION AND COMPANY

Product Name and/or Code: **ANDONOX ENP-90**

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 tel. +46 8 33 70 43 or National Poison Centre.

2. HAZARDS IDENTIFICATION OF THE PREPARATION

Danger classification: O = Oxidising
C = Corrosive



May cause fire. Harmful if swallowed. Causes burns.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components	EINECS-no	CAS-no	Conc. %	Symbol/R-phrases
Methyl ethyl ketone peroxide	215-661-2	1338-23-4	30-40	E, C / 2, 22, 34
Proprietary phlegmatiser	229-934-9	6846-50-0	60-70	None
Hydrogen peroxide	231-765-0	7722-84-1	< 2	O, C / 5, 8, 20/22, 35
Methyl ethyl ketone(2-butanone)	201-159-0	78-93-3	< 1.5	
Water			< 1.5	F, Xi / 11,36,66,67

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, alternate 2% NaCO₃, holding the eyelids apart and seek medical advice if necessary.

Ingestion:

If accidentally swallowed obtain immediate medical attention. Keep at rest. Drink water or milk, and **DO NOT** induce vomiting.

5. FIRE-FIGHTING MEASURES

This peroxide is hard to ignite but will burn vigorously with acceleration. Use Water from a safe distance – preferably with a water-fog nozzle. For very small fires, an extinguisher with carbon dioxide, foam or dry chemical may be effective. In case of a fire in or near a storage area, cool stored containers with water spray.

Recommendations:

Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Appropriate breathing apparatus may be required. Cool closed containers exposed to fire with water. Do not allow run-off from fire fighting to enter drains or watercourses.

Decomposition products see section 10.

6. ACCIDENTAL RELEASE MEASURES

Avoid sources of ignition and ventilate the area. Avoid breathing vapours. 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 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

Engineering Measures.

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Use clean equipment and tools of inert material such as stainless steel, polyethylene, polypropylene and glass. All equipment should be earthed. Use Peleus ball when pipetting the peroxide solutions.

Exposure Limits:

Component	CAS-no.	Swedish Exp.limits / Type	ACGIH / Type
Methylethyl ketone peroxide	1338-23-4	0.2 ppm / C	0.2 ppm / C
Hydrogen peroxide	7722-84-1	1 ppm / TWA	1 ppm / TWA
Butanone (methylethyl ketone)	78-93-3	50 ppm / TWA	200 ppm / TLV

No EEC-list available.

TWA = Time Waited Average

TLV = Threshold Limited Value

C = Ceiling Limited Value

Personal Protection.

Respiratory protection:

Is required if the limit like TLV are exceeded. Gas mask with filter A (brown, organic substances) may be necessary.

Hand protection:

Use resistant gloves of: butylrubber, ethylen-vinylalcohol, teflon.

Barrier creams may help to protect the exposed areas of the skin, they should however not be applied once exposure has occurred.

Eye protection:

Use safety eyewear designed to protect against splash of liquids. Splashes in the eyes may cause serious eye damage.

Skin protection:

Personnel should wear antistatic clothing made of natural fibre or of high temperature resistant synthetic fibre. All parts of the body should be washed after contact.

Last Changed: 23 November 2007

Product name: ANDONOX ENP-90

3(7)

Replaces: 15 November 2006

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Flash point (°C)	> 80 Method: Seta Flash
Viscosity at 20°C (mPas)	15 - 18
pH	4 - 7
Active oxygen (%)	9.0 - 9.2
SADT (°C)	60
Density at 20°C (g/cm³)	1.00 - 1.05
Colour	Clear, colourless
Solubility in water	Immiscible

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. SADT 60 °C.

Hazardous reactions:

Self-decomposition is catalysed by substances such as acids, strong bases, tert-amines, Friedel-Crafts catalysts and heavy metals.

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.

Decomposition and combustion products:

Carbon dioxide, Water, Acetic acid, Formic acid, Propanoic acid.

11. TOXICOLOGICAL INFORMATION

There are no data available on the preparation itself.

Irritation data(Methyl ethyl ketone peroxide <45%):

Skin(rabbit)	500mg	AIHAAP 19, 205, 1958
Eye(rabbit)	3mg	AIHAAP 19, 205, 1958

Toxicity data(Methyl ethyl ketone peroxide <45%):

Oral (rat)	LD-50	484mg/kg	AIHAAP 19, 205, 1958
Oral (mouse)	LD-50	470mg/kg	JAMAAP 165, 201, 1957
Inhalation(rat)	LC-50	200ppm/4h	AIHAAP 19, 205, 1958
Inhalation(mouse)	LC-50	170ppm/4h	AIHAAP 19, 205, 1958

Toxicity effects:

This product is extremely irritant for the eyes, just a few drops of it might cause irreversible lesion and permanent injury of the cornea. If there is a skin contact, it might cause irritation, skin-rash, swelling and chapping. The inhalation of its vapours causes cough, headache and irritation of the respiratory-system.

Swallowing causes strong irritation and burn of throat and stomach. Perforations of the mucous membranes might occur and, according to its quantity, it might also cause the death of the injured person. The organic peroxides are dangerous for the organism since the peroxide oxygen is reduced to radical that induces into the cellular metabolism.

Skin contact:

Strongly irritant. Causes burns

Eyes contact:

Strongly irritant, corrosive.

Ingestion:

Harmful

Cancerogenic-Mutagenic-Reproductive effects:

No evidence of these effects has been reported.

12. ECOLOGICAL INFORMATION

Methyl ethyl ketone peroxide 33%

Ecotoxicity

Fish acute toxicity, LC50 (96h) 44,2 mg/l (Poecilia reticulata)

Bacteria EC50 48 mg/l

Readily biodegradable (closed bottle test)

Methyl ethyl ketone

Ecotoxicity

Fish acute toxicity, LC50 (96h) 3,22 mg/l (Lepomis macrochirus)

Bacteria EC50 48 mg/l

Readily biodegradable (closed bottle test)

This product is readily biodegradable and it's not toxic to aquatic organisms.

13. DISPOSAL CONSIDERATIONS

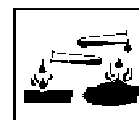
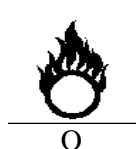
Do not allow into drains or watercourses. Water and emptied containers should be handled according to local regulations.

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 D, liquid (methyl ethyl ketone peroxide)	
UN 3105	Class: 5.2
	Label: 5.2
	Packaging group: II
Marine pollutant: No	EmS No: F-J, S-R

15. REGULATORY INFORMATION



Danger classification: O = Oxidising
C = Corrosive

Contains: Methyl ethyl ketone peroxide

R phrases:

R-7 May cause fire.
R-22 Harmful if swallowed.
R-34 Causes burns.

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.

16. OTHER INFORMATION

In addition from section 2:

Methylethylketone peroxide. Symbol E, C

- R2 Risk of explosion by shock, friction, fire or other sources of ignition
- R22 Harmful if swallowed
- R34 Causes burns

Hydrogen peroxide. Symbol O, C

- R5 Heating may cause an explosion.
- R8 Contact with combustible material may cause fire
- R20/22 Harmful by inhalation and if swallowed.
- R35 Causes severe burns.

Methylethylketone. Symbol F, Xi

- R11 Highly flammable
- R36 Irritating to eyes
- R66 Repeated exposure may cause skin dryness or cracking
- R67 Vapours may cause drowsiness and dizziness

This product is produced in Sweden.