

SAFETY DATA SHEET

1. IDENTIFICATION OF THE PREPARATION AND COMPANY

Product Name and/or Code: **ANDONOX MEC**

Intended use: Initiator for unsaturated polyester resin.

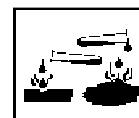
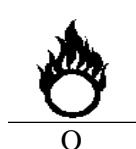
Name and address of the company: Syrgis Performance Initiators AB
Box 26083
SE-100 41 Stockholm
Sweden

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	25-30	E, C / 2-22-34
Cyclohexanone Peroxide	235-527-7	12262-58-7	10-15	E, C / 2-22-34
Dimethyl phthalate	205-011-6	131-11-3	30-40	
Proprietary phlegmatiser	202-259-7	93-58-3	15-25	Xn / 22
Hydrogen peroxide	231-765-0	7722-84-1	< 1.5	O, C / 5,8,20/22,35
Methyl ethyl ketone (2-butanone)	201-159-0	78-93-3	< 3	F, Xi / 11-36-66-67
Water			< 2	

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

Extinguishing media:

Water from a safe distance - preferably with a fog nozzle. In case of very small fires, other means such as carbon dioxide, foam or dry chemical extinguishers may be effective. Dry chemical combined with MEC may re-ignite. Light water additives may be particularly effective at extinguishing MEC fires.

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 water courses.

Unusual fire and explosion hazards:

The heat of decomposition of the peroxides adds to the heat of the fire. Dry chemical fire extinguishing agent may catalyze the decomposition.

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 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
Methyl ethyl ketone peroxide	1338-23-4	0.2 ppm / C	0.2 ppm / C
Dimethylphtalate	131-11-3	3.0 mg/m ³ / TWA	5 mg/m ³ / TWA
Hydrogen peroxide	7722-84-1	1 ppm / TWA	1 ppm / TWA
Butanone (methylethyl ketone)	78-93-3	50 ppm / TWA	200 ppm / TLV
Cyclohexanone	108-94-1	25 ppm / TWA	

No EEC-list available.

TWA = Time Waited Average

TLV = Threshold Limited Value

C = Ceiling Limited Value

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 ethylen-vinylalcohol, Teflon, nitril or neoprene).
Other: None.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Flash point (°C)	> 80 Method: Seta Flash
Viscosity at 20°C (mPas)	17-29
pH	4 – 7
Free H₂O₂ (%)	0.4 – 1.0
Active oxygen (%)	9.6 - 9.8
Density at 20°C (g/cm³)	1.12 - 1.15
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 65 °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, Cyclohexanone, Acetic acid, Formic acid, Propanoic acid.

11. TOXICOLOGICAL INFORMATION

There are no data available on the preparation itself.

Methyl Ethyl Ketone Peroxide

Hazard Data:

Inhalation: Rat--LC₅₀: 200 ppm/4 hr, lung, thorax, respiration, or dyspnea;

Mouse--LC₅₀: 170 ppm/4 hr, lung, thorax, respiration, or dyspnea.

Intraperitoneal: Rat--LD₅₀: 65 mg/kg, behavioral, muscle weakness behavioral, ataxia.

Oral: Rat--LD₅₀: 484 mg/kg; Mouse--LD₅₀: 470 mg/kg; Human--TD_{Lo}: 480 mg/kg, changes in structure or function of esophagus gastrointestinal, nausea or vomiting gastrointestinal.

Skin: Rabbit-- LD₅₀: 500 mg.

Cyclohexanone Peroxide

Hazard Data:

Parenteral: Mouse--LD₅₀: 2000 mg/kg

Dimethyl Phthalate

Hazard Data:

Inhalation: Cat--LC_{Lo}: 9300 mg/m³/6.5 hr.

Intraperitoneal: Mouse--LD₅₀: 1380 mg/kg.

Oral: Rat & Mouse--LD₅₀: 6800 mg/kg, somnolence behavioral, withdrawal nutritional and gross metabolic, weight loss or decreased weight gain; Dog--LD: >1400 mg/kg; Rabbit--LD₅₀: 4400 uL/kg.

Subcutaneous: Mouse--LD_{Lo}: 6500 mg/kg, dyspnea lung, thorax, respiration, or cyanosis.

Proprietary phlegmatiser

Hazard Data:

Oral: Rat--LD₅₀: >3200 mg/kg

Hydrogen Peroxide

Hazard Data:

Inhalation: Mouse--LC_{Lo}: 227 ppm; Rat--TC_{Lo}: 67 ppm/6hr/6W-1, dermatitis, irritative of the skin.

Intraperitoneal: Mouse--LD₅₀: 880 mg/kg.

Intravenous: Rabbit--LD₅₀: 15 gm/kg, behavioral, convulsions or effect on seizure threshold.

Oral: Rat--LD₅₀: 376 mg/kg, gastrointestinal, peritonitis blood, pigmented or nucleated red blood cells; Mouse--LD₅₀: 2 mg/kg.

Subcutaneous: Rat--LD₅₀: 620 mg/kg; Mouse--LD₅₀: 1072 mg/kg.

Skin: Rat--LD₅₀: 4060 mg/kg, lung, thorax, respiration, or pulmonary emboli;

Rabbit--LD_{Lo}: 500 mg/kg, behavioral, convulsions or effect on seizure threshold.

Methyl Ethyl Ketone

Hazard Data:

Eye: Human: 350 ppm.

Inhalation: Rat--LC₅₀: 23.5 mg/l /8hr.

Intraperitoneal: Rat--LD₅₀: 607 mg/kg; Mouse--LD₅₀: 616 mg/kg.

Oral: Rat--LD₅₀: 2737 mg/kg; Mouse--LD₅₀: 4050 mg/kg.

Skin: Rabbit--LD₅₀: 6480 mg/kg.

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. Its 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.

Eyes contact:
Strongly irritant.

Ingestion:
Harmful

Cancerogenic-Mutagenic-Reproductive effects:
No evidence of these effects has been reported.

12. ECOLOGICAL INFORMATION

No information available on the preparation itself. This product should be prevented from entering drains, sewers, streams, etc.

Ecotoxicity: Methyl ethyl ketone peroxide: EC₅₀ (Guppy), 44.2 mg/L/96 hr; EC₅₀ (alga), 42,700 ug/L/96 hr.

Environmental Fate: Methyl ethyl ketone peroxide (MEKP) was evaluated for biodegradability in a closed bottle system and was reported to be readily biodegradable. An EC₅₀ of 16mg MEKP/L activated sludge was reported in an activated sludge respiration inhibition test.

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

13. DISPOSAL CONSIDERATIONS

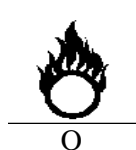
Do not allow into drains or watercourses. Water and emptied containers should be handled according to local regulations.

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: F-J, S-R

15. REGULATORY INFORMATION



Danger classification: O = Oxidising
C = Corrosive

Contains: Methyl ethyl ketone peroxide
Cyclohexanone 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:

Cyclohexanone Peroxide. Symbol E, C

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

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

Methyletylketone. 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

Proprietary phlegmatiser. Symbol Xn

R22 Harmful if swallowed

This product is produced in Sweden.