organic peroxides promox		Technical Data Sheet
REVISION N° 00	DATED 01.02.2010	PROMOX P360

PRODUCT AND COMPANY IDENTIFICATION

Commercial name	**PROMOX P360**		
Chemical name	**Mixture of Peroxides - AcetylAcetone Peroxide & Tert-butyl Perbenzoate**		
Intended use	For Industrial Use – Curing of Unsaturated Polyester Resins – Reaction Initiator		
Manufacturer/supplier	PROMOX SRL	Via A. Diaz, 22/a	21038 Leggiuno (VA)
	tel. +39/0332/648380	fax +39/0332/648105	e-mail info@promox.eu
Emergency telephone	**In the case of any accidental contact, call:**		
	ANTIPOISONS CENTER – MILAN – ITALY		TEL. +39/02/66101029
	PROMOX SRL – 24h/24h		TEL. +39/0332/649267

PRODUCT PROPERTIES AND RANGE OF APPLICATION

Description of the Products

The **PROMOX P360** is a peroxide mixture which contains AcetylAcetone Peroxide (Cas n°. 37187-22-7) and Tert-butyl Perbenzoate (Cas n°. 614-45-9), P360 is AAP with improved cure performances. It is used for the curing process of unsaturated polyester resins together with various accelerating systems. It's a special mixture based on AcetylAcetone peroxide with energized characteristics of curing.

The **PROMOX P360** is a special mixture of peroxides used in most production cycles at a ambient temperature (Polyester concrete and Marble) both at elevated temperature. The concentration of use generally ranges from 1 to 2 part /100 parts of resin.

Accelerators and Promoters

Generally cobalt salts (octoate, naphtenate) are used but seldom vanadium o manganese salts. The accelerator performances can be improved by adding promoters which exalt their action.

Uses and Contraindications

It is a extremely efficient curing agent, especially formulated for the curing of Unsaturated polyester resins at elevated temperatures in union with accelerators like Cobalt (Max 1% in cobalt) salts. It is employed in any case elevated speeds of hardening are required. In comparison to the standards MEKPs the **PROMOX P360** underlines elevated speeds of hardening without modifying the gel time. The P360 is a P300 based mixture optimized especially for elevated temperature working cycles**.** These characteristics make it fit to Filament Winding process, Continuous Laminating process, Resin Transfer Molding process, and Centrifugal casting process.

Employment Area: Polyester Resins, Unsaturated Polyesters, UP Resins. **High and Elevated temperature Applications**: Continuous Laminating, Fiberglass Reinforced Plastics, Polymer Concrete/Marble, Resin Transfer Molding, Thermoset Composites.

Packaging

Promox peroxides are normally packaged in 25 kg polyethylene drums. Smaller packaging is available as requested. Drums are palletised from 600 to 900 Kg weight net.

Stability

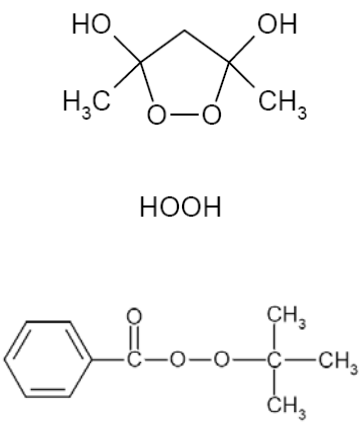
The product is stable under normal storage conditions for at least six months from the date of production.

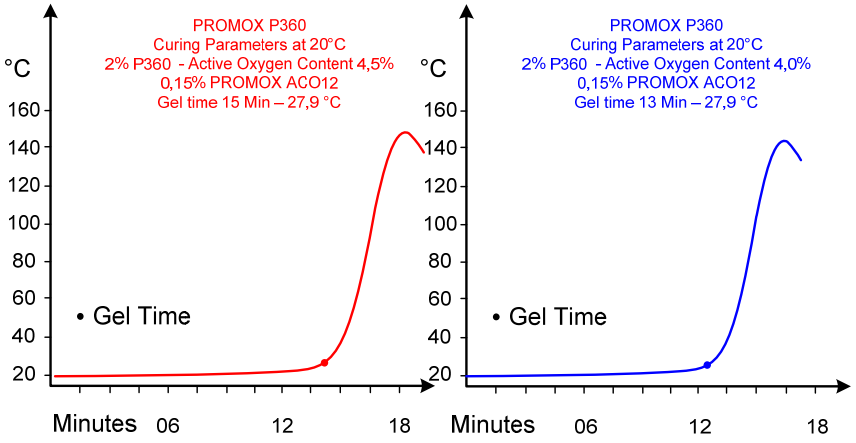
Storage

When the product is stored under recommended storage conditions, it keeps the original properties for a period of at least six months after delivery. **Recommended storage Temperature: < 30°C.**

Curing Diagrams and Curing Data

A high reactive, pre accelerated orthophtalic resin has been used to test the peroxide. The Gel time at 20°C is obtained adding 1 parts of peroxide /100 parts of resin and 1 parts of accelerator (Cobalt 1%) /100 parts of resin. Gel time about 18 Minutes.





PHYSICAL AND CHEMICAL PROPERTIES

General information

Characteristic	Characteristic	Characteristic
Appearance	-	Liquid
Colour - Odour	-	Colourless – Characteristic Distinctive
Active oxygen content	%	4,0 – 4,5
Peroxides content	%	> 20
Flegmatizer – DiacetonAlcohol Content	%	> 50

Other information

Characteristic	Characteristic	Characteristic
Boiling point/ interval	°C	100°C decomposes
Flash point (closed cup)	°C	> SADT value
Flammability ASTM D-4206-96(2001)	-	Not applicable
Explosive properties	-	Product is not explosive.
SADT (Self Accelerated Decomposition Temperature)	°C	> 60°C
Relative density UNI EN ISO 12185-00	d 20/20	1.045
Viscosity at 20 °C ISO UNI EN 3104	mPa.s	13

PRINCIPAL RISK

Principal risk	It may cause fire. Irritating to eyes and skin. May cause sensitisation by skin contact.
Health effects – Eye	Contact with eyes causes injury to the cornea and eyelids.
Health effects – Skin	Contact with skin causes burns.
Health effects – Ingestion	Swallowing causes corrosion to oral cavity, pharynx and to alimentary canal.
Health effects – Inhalation	Reduced inhalation risk.

STABILITY AND REACTIVITY

Storage Stability	The product is stable under the recommended conditions of Storage and Manipulation. Under the recommended conditions of maintenance the product maintains unchanged his own characteristics for a long period of storage, more than 6 months. Store in fresh place, well aired, in the closed original containers, away from every sources of heat, from inflammable and incompatible substances.
Reactivity	It can rapidly decompose if heated or mixed with other incompatible chemical compounds. Product decomposition is detected by temperature increase and fumes emission. The oxygen developed during the decomposition phase, in case of fire, may support the combustion of flammable products.
Conditions to avoid	It can rapidly decompose if heated or mixed with other incompatible chemical compounds. It is therefore necessary to avoid the product coming into contact with all kinds of acids and alkalis, especially if in a concentrated form; any oxidizers, any peroxides and all organic and flammable compounds. Store in a well ventilated place away from sources of heat and direct sunlight.
Decomposition products	The main products of the decomposition/combustion process are: hydrocarbons, oxygen, Carbon dioxide and carbon monoxide, water. The product is stable under normal storage conditions. No hazardous decomposition products if used and stored according to specifications. Do not inhale explosion gases or combustion gases.

TOXICOLOGICAL INFORMATION

2,4 PENTANEDIONE PEROXIDE - ACETYL ACETONE PEROXIDE

Acute toxicity – Ingestion	LD50 oral - (lethal dose rat)	2870 mg/Kg
Acute toxicity – Inhalation	LC50 (lethal concentration rat)	> 1h in saturated space
Acute toxicity – Dermal	LD50 (lethal dose rat)	1370 mg/Kg
Eye irritation	(rabbit)	Moderately irritant
Skin irritation	(rabbit)	Lightly irritant
Genotoxicity “in vitro” (Ames test)		N.d.
Skin sensitization		May cause sensitisation by skin contact.

TERT BUTYL PERBENZOATE

Acute toxicity – Ingestion	LD50 oral - (lethal dose rat)	>2000 mg/Kg
Acute toxicity – Inhalation	LC50 (lethal concentration rat)	200 mg/l 4h
Acute toxicity – Dermal	LD50 (lethal dose rat)	>2000 mg/Kg
Eye irritation		Lightly irritant
Skin irritation		Irritante per la pelle e le Mucose
Genotoxicity “in vitro” (Ames test)		Negative - Non Mutagenic
Skin sensitization		Don’t cause sensitisation

HANDLING AND FIRST MEASURES

Personal precautions The working area shall be provided with suitable ventilation system in order to keep the product concentration rate in the air at a low level. Wear suitable protective gloves of neoprene or synthetic rubber. Wear eye/face protection during pouring.

Handling Apply the legislation regarding the Industrial Hygiene/Safety job. During the operation use the individual protective devices. Do not allow operators to use naked flames, to produce sparks or to smoke inside the rooms where the product is handled and stored. Do not breathe fumes/vapours. Avoid loss and/or disperses. Keep container tightly sealed. Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e.g. heavy metal compounds and amines) those can cause the decomposition of the product. Avoid peroxide refilling into its original container. The containers used to collect and pour out the product are to be kept scrupulously clean.

First aid - Inhalation Take the injured person away from the contaminated area. If the injured person shows any signs of breathing-insufficiency, give artificial respiration by means of a self-expanding balloon mask (AMBU). Immediately take the injured person to the nearest first-aid post.

First aid - Skin Remove the accidentally contaminated clothes immediately, wash any affected skin area with plenty of lukewarm water and soap. Should there be persistent skin reddening or irritation, take the injured person to the nearest first-aid post for burns treatment.

First aid - Eyes Wash immediately with plenty of running keeping the eyelid always far from the eye. Immediately take the injured person to an oculist. Do not treat injured eyes with any ointments or oils.

First aid - Ingestion Do not induce vomiting. Rinse mouth with water and immediately take him to the nearest first-aid post.

Extinguishing media **Suitable Extinguishing Media: Water Spray, alcohol resistant foam, powder, CO_2. Fight larger fires with Water Spray or alcohol resistant foam. Unsuitable Extinguishing Media: Halones, Water with full jet .** Always use water as an extinguisher, preferably broken up, keeping windward and at a safe distance. Cool down both the containers which have been involved in the fire and the surrounding area. Do not start cleaning the area or salvaging the goods before the whole area has completely cooled down. In case of product decomposition, this is detectable by the formation of fumes and by containers overheating, cool down with water.

Methods for cleaning up Do not allow to enter drains or water courses. Collect as much as possible in a clean container for (preferable) reuse or disposal. Cover the remainder with inert absorbent (e.g. vermiculite) or hearth for disposal. Never try to recover the discharged product, or reintroduce it into its original containers. Large quantities should be diluted with suitable desensitation agent to a concentration below 10 % before disposal. After the pick up of the product neutralize with soda or lime and dilute with water avoiding excessive liquid waste dispersion. Follow the recommendations of Section 13. In case of large spillage the environmental authority should be informed.

For any further information, refer to the safety data sheet of the product, according to Directive 1907/2006.

REGULATORY INFORMATION

Warning Symbols:


O - Oxidizing


Xi - Irritant

Risk phrases
R7: May cause fire. **R36/38:** Irritating to eyes and skin.

Safety phrases
S3/7: Keep container tightly closed in a cool place. **S14:** Keep away from reducing agents, alkali and compounds with heavy metal bases (e.g. accelerators). **S16:** Keep away from sources of ignitions. No smoking. **S26:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. **S36/37/39:** Wear suitable protective clothing, gloves and eye/face protection. **S45:** In case of accident or if you feel unwell, seek medical advice immediately (Show the label where possible). **S50:** Do not mix with accelerating agents or promoters.

All suggestions included in this safety information card are the summary of the most reliable data available at the moment. It is however impossible to guarantee that these instructions are sufficient and/or valid for any application, some data are still in review. They are informative, they do not represent any guarantee of the characteristics of the product and they do not motivate any contractual legal relationship. The directory of the law witnesses and regulations does is not to be considered like exhausting. For any further information, users may directly contact the Promox Technical Service.

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Revision 00	01.02.2010	01.02.2010	info@promox.eu