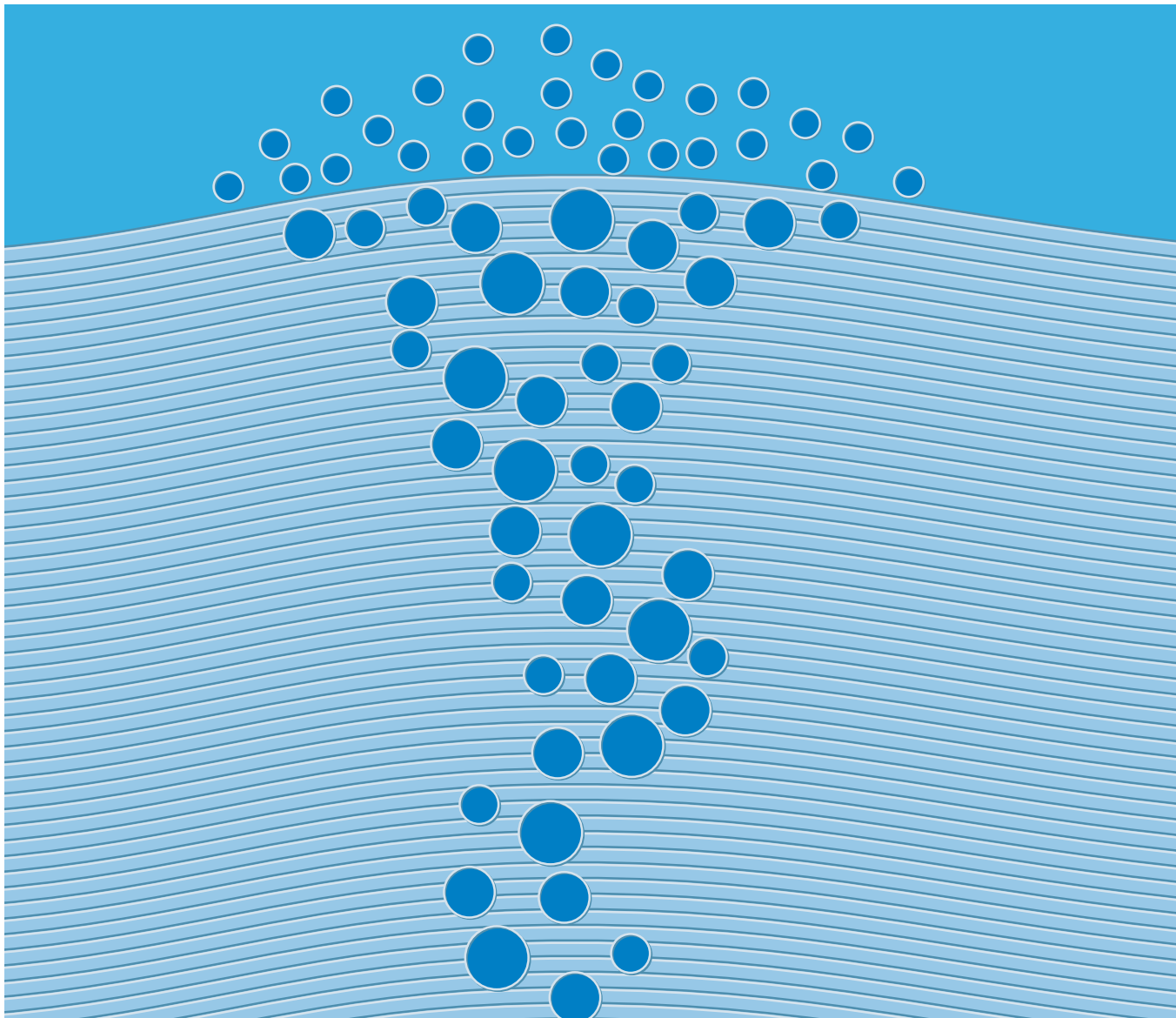


# IXPER<sup>®</sup> 60 C / IXPER<sup>®</sup> 75 C (Calcium peroxide)

Product data sheet FP 4.1.10



Solvay  
Interox



**General description**

IXPÉR® 60 C/75 C is the brand name of a special product that consists mainly of calcium peroxide. The minor constituents are calcium carbonate and calcium

hydroxide as well as some natural bonding agents and fillers.

**Composition**

	IXPÉR® 60 C	IXPÉR® 75 C
Molar mass of CaO <sub>2</sub>	72.1	72.1
Calcium peroxide typical	62 %	77 %
Active oxygen typical	13.7 %	17.1 %

**Physical properties**

Appearance	yellow-white powder
Odour	odourless
Solubility in water at 20 °C	low solubility (1.65 g/l) during decomposition
Bulk density	approx. 600 kg m <sup>-3</sup>
pH at 20 °C	approx. 12.3 (saturated solution)

**Classification**

CAS No. 1305-79-9  
EINECS No. 215-139-4

**Packaging**

- 25 kg carton with polythene liner
- 50 kg carton with polythene liner
- 500 kg IBC

**Transport**

UN No. 1457

Regulations	Class	Item or page	Packaging group
GGVS/ADR	5.1	25b	II
GGVE/RID	5.1	25b	II
IMDG Code	5.1	5140	II
IATA	5.1	–	II

**Handling****Danger information**

- R 8** Fire danger when it comes into contact with combustible materials
- R 38** Irritates the skin
- R 41** Danger of serious eye injury

**Danger symbol**

X<sub>i</sub> Irritating



O Oxidising agent

**Safety advice**

- S 3** Keep in a cool place
- S 8** Keep container dry
- S 17** Keep away from combustible materials
- S 24/25** Avoid contact with eyes and skin

- S 26** If the product comes into contact with the eyes, rinse with plenty of water and seek medical advice
- S 39** Wear chemical goggles/protective visor

## Storage

If stored in its original container and kept at room temperature away from moisture and contamination, the product will remain stable for two years.

Calcium peroxide should be stored in a cool, dry place, preferably in its sealed original container. Although calcium peroxide is not hygroscopic, the packaging must be protected from moisture.

It should not be allowed to come into contact with any contaminant.

In the absence of moisture, the loss of active oxygen is exceptionally low.

In the presence of water it slowly decomposes, releasing oxygen and forming a calcium hydroxide solution. Heat and contamination accelerate the rate of decomposition.

Storage temperature < 40 °C.

## Handling

It is recommended that vessels and equipment used for the product be made from stainless steel or plastic (PVC, PE), glass or enamel. Copper and brass should be avoided at all costs. All equipment must be kept clean.

Calcium peroxide is an alkaline product and irritates mucous membranes; it has

a low toxicity. However, when handling the product, it is recommended that a dust mask and gloves be worn to prevent inhalation or direct contact with the skin.

## Areas of application

### Agriculture

IXPER® 60 C/75 C is used as a source of oxygen in various agricultural applications, for instance a dosage of 50 kg/ha is applied when potatoes are planted. It has been proven to increase yield and improve the quality of the produce.

Transplanting young plants and trees can damage them. IXPER® 60 C/75 C encourages growth by providing an even and long lasting supply of oxygen to the roots. This benefits fibrous root and root growth and reduces the stress of transplantation.

### Indoor plants and hobby gardening

IXPER® 60 C/75 C can also be used by hobby gardeners. The even release of oxygen in the soil improves germination, encourages root growth, helps the plants to acclimatise after being transplanted and encourages cuttings to grow.

In indoor plants, IXPER® 60 C/75 C increases the supply of oxygen to the soil and thus encourages stronger root growth. IXPER® 60 C/75 C reduces the problems caused by too much watering. A single dose is sufficient for the complete growth period.

### Compost

The use of IXPER® 60 C/75 C for compost prevents the formation of anaerobic zones within the compost heap by specifically releasing oxygen within the different layers of the waste materials. It is

especially effective with waste that is otherwise not particularly biodegradable, such as long grass, leaves etc. Around 1–2% of IXPER® 60 C/75 C is added evenly to the compost heap right from the beginning. The high temperature that this produces accelerates the composting process, and because of the improved distribution of oxygen, it is unnecessary to turn the compost mechanically. Practical tests have shown that compost made in this way is excellent for use as an additive in potting earth.

### Bins for bio waste

IXPER® 60 C/75 C is excellent for destroying smells in bio waste bins. Sprinkling some of the product over the waste reduces smells and keeps flies away.

## Areas of application

### Sealants

IXP<sup>®</sup> 60 C/75 C is often used as a hardening agent in one-component polysulphide-based sealants. It is reactivated by water. If it is incorporated into a water-free sealant, it hardens by absorbing moisture from the air.

Generally in one-component sealants, 5 to 15 parts of IXP<sup>®</sup> 60 C/75 C are added per 100 parts of polysulphide polymer along with plasticisers and fillers. Barium oxide is often used as a drying agent. White sealant can be produced in this way or a colorant can be added. To ensure that the hardening process does not start too soon, it is absolutely imperative that no moisture is permitted to come into contact with the product. When the various constituents are being mixed, humidity should be kept to an absolute minimum.

If stored in dry conditions, the sealant additive remains stable for up to one year. Under normal temperature and humidity conditions, the sealant hardens within 24 hours of being applied and can then be painted. However, it takes two to four weeks before the sealant is completely hard.

### Metallurgy

IXP<sup>®</sup> 60 C/75 C is used as a source of oxygen in aluminothermic processes and in other metallurgical processes. Adding IXP<sup>®</sup> 60 C/75 C to aluminothermic mixtures improves ignitability at low temperatures. The temperature of the smelt is increased, making it easier to separate the slag from the metal.

Exothermic mixtures with the addition of IXP<sup>®</sup> 60 C/75 C can also be used to increase the temperature of the metal during the preparation of castings and to prevent casting defects.

### Bakery industry

In many countries, particularly in the US, calcium peroxide is used as a dough additive in bread production. Adding 0.001 to 0.005 % of the weight of the flour improves flavour and gives the baked bread a better appearance and structure. The bread keeps longer and can be cut in thinner slices. IXP<sup>®</sup> 60 C/75 C complies with the United States Food Chemicals Codex for calcium peroxide and fulfils the requirements of the Kosher Certificate.

However, in many European countries the addition of calcium peroxide to foods is not permitted, e.g. in Germany.

### Pharmaceutical and cosmetic products

IXP<sup>®</sup> 60 C/75 C is used in a range of products in the pharmaceutical industry, especially in the production of formulations to treat gastric acid and for treating cattle. It is also used in toothpaste formulations.

### Environment

IXP<sup>®</sup> 60 C/75 C can be used to increase the concentration of oxygen in drinking water, to reduce the formation of slime on filters and to treat water containing metal ions, for example to remove iron and manganese.

IXP<sup>®</sup> 60 C/75 C can be used to increase oxygen in deeper zones of artificial and natural lakes and in wastewater.

The oxygen concentration in the deeper parts of lakes is very low and many of the countermeasures that have been used to date are inadequate, as they either require the water to be churned around which in turn brings nutrients to the surface, encouraging the formation of algae, or because the concentration of oxygen remains unsatisfactory.

Since IXP<sup>®</sup> 60 C/75 C sinks to the bottom and releases oxygen slowly over a period of time, under certain conditions IXP<sup>®</sup> 60 C/75 C can provide a better solution for increasing the concentration of oxygen in deeper water zones than other methods.

## Determining the concentration of active oxygen

### Equipment

- Erlenmeyer flask
- Dosimat and sample changer

### Reagents

- Mixed acid consisting of 750 ml distilled H<sub>2</sub>O, 125 ml 85 % o-phosphoric acid and 125 ml 32 % hydrochloric acid
- c (1/5 KMnO<sub>4</sub>) = 0.1 mole/l potassium permanganate solution

### Procedure

Approx. 0.15 g of the sample is weighed to the nearest 0.1 (E). This is mixed with water and approx. 20 ml of the mixed acid is added. The solution is then titrated with the KMnO<sub>4</sub> solution until it turns a faint pink (V).

### Calculation

$$\% \text{CaO}_2 = \frac{V \cdot t \cdot 0.1 \cdot 72.08 \cdot 100}{1000 \cdot E \cdot 2}$$

$$\% \text{AO} = \frac{V \cdot t \cdot 0.1 \cdot 0.8}{E}$$

t = Titre of solution

## Other IXPER® products

A wide range of inorganic peroxide products is supplied under the IXPER® name. Besides IXPER® 60 C/75 C these include IXPER® 25 M (25 % magnesium peroxide) IXPER® 35 M (35 % magnesium peroxide)

Other concentrations and forms of delivery for special applications can be supplied; samples can be provided on request.

Please contact us if you require any further information.

All statements are made according to the best of our knowledge; however, they do not relieve the user of his obligation to carry out his own checks, in particular in regards to patent laws. In any event, national or local safety and occupational regulations must be complied with, as we cannot accept any liability.

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