

SUMMARY OF PRODUCT CHARACTERISTICS

1 NAME OF THE MEDICINAL PRODUCT

Microcat 50 mg/mL, oral suspension

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

For 100 mL of oral suspension:

Barium sulfate5.00 g

Excipients with known effect

Sorbitol (E420).....3.33 g

Sodium citrate (E331)0.50 g

Potassium sorbate (E202).....0.14 g

Sodium methyl parahydroxybenzoate (E219).....0.14 g

Saccharin sodium (E954)0.03 g

For a full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Oral suspension.

Gelled white suspension with apricot flavour.

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

This medicinal product is for diagnostic use only.

Opacification of the gastrointestinal tract during computerised axial tomography.

4.2 Posology and method of administration

Posology

Adults

Recommended dose: 150 ml barium suspension diluted to 500 ml with water (giving a working concentration of 1.5 % w/v) swallowed at the beginning of the examination, or as the radiologist prefers.

Elderly

No special dosage regimen is required, but care should be taken to observe the contraindications and warnings below.

Paediatric population

No children's dose is recommended, as such investigations in children are rare and specialised. The dosage will therefore be tailored by the radiologist to suit the special requirements in each case.

4.3 Contraindications

This medicinal product is contraindicated in case of:

- Hypersensitivity to the active substance or to any of the excipients listed in section 6.1;
- Confirmed or suspected intestinal obstruction or perforation, including pyloric stenosis;
- Suspected peritonitis or fistulas in the gastrointestinal tract;
- Fresh wounds or erosions of the oesophagus or gastrointestinal tract, or gastrointestinal bleeding;
- Ischaemia of the bowel wall;
- Necrotising enterocolitis;
- Postoperative suture failure. Barium sulfate must not be administered immediately before or for up to seven days after gastrointestinal surgery, including endoscopic excision procedures, snare polypectomy or hot biopsy of the colon. The product must not be used if postoperative leaks are expected. Do not use the product during or for up to four weeks after neck, chest (if oral use) or abdominal radiotherapy.

4.4 Special warnings and precautions for use

Not for injection.

Special warnings

Severe adverse reactions have been reported in combination with the administration of barium sulfate compositions, including aspiration, intravasation, perforation, anaphylaxis, with possible life-threatening or fatal outcome. These reactions were usually related to the administration technique, the underlying pathological condition and/or patients hypersensitivity.

The product should be taken under medical supervision. Rapid detection, assessment and diagnosis are essential for an effective implementation of treatment of potentially severe adverse reactions. Imaging facilities should have trained and specialised personnel for the diagnosis and treatment of hypersensitivity reactions. Urgent specialised medical measures are required in the event of aspiration, intravasation or perforation (intensive care, surgery).

To prevent potentially severe adverse reactions, care must be taken to keep barium sulfate from entering parenteral regions such as tissues, intravascular space or body cavities as well as the airways.

The indication must be very carefully considered in small children and elderly patients with multiple organ failure, especially in the cardiovascular system, as the examination and preparatory measures can be stressful.

Precautions for use

Hypersensitivity

Patients who have already experienced a reaction during previous administration of barium sulfate present an increased risk of experiencing another reaction on subsequent administration of this contrast agent, or possibly other barium sulfate contrast agents, and are therefore considered to be at high risk.

Hypersensitivity reactions can occur even after the first administration of the product, and are often unpredictable. Should this occur, treatment must be discontinued immediately. Such reactions call for immediate medical treatment.

The administration of barium sulfate may aggravate symptoms of an existing asthma. In patients with asthma unbalanced by the treatment, the decision to use barium sulfate must be made after careful evaluation of the benefit/risk ratio.

Perforation

Because of the increased risk of perforation, the benefit-to-risk ratio must be carefully assessed in patients with oesophageal atresia or with severe stenosis, especially distal to the stomach, as well as in patients with disorders and diseases involving a high risk of perforation such as intestinal carcinoma, inflammatory bowel diseases, diverticulosis, diverticulitis, and parasitic disease.

In the event of oesophageal atresia, opacification of the pouch should be avoided as far as possible. If performed, the smallest amount of contrast agent should be used and then withdrawn.

Leakage of barium into the retroperitoneum or mediastinum may cause few immediate symptoms but delayed endotoxic shock can develop 12 hours later and is frequently fatal.

In case of intestinal perforation, the passage of barium sulfate in the abdominal cavity can be the cause of abscesses, inflammations, peritonitis, granulomas and adhesions with possibly fatal outcome and the need for surgery.

Aspiration

Care should be taken in patients with respiratory and swallowing disorders, including dysphagia and reduced alertness, due to the risk of aspiration.

In patients who are highly susceptible to aspiration (neonates, elderly and stroke patients), the procedure should begin with a small oral dose.

- Vomiting after oral administration of barium sulfate can result in aspiration pneumonia. Aspiration into the tracheobronchial system is possible during oral administration to infants of barium sulfate suspension in bottles and during administration of large quantities via a

catheter. Cardiopulmonary arrest with fatal outcome can occur after aspiration by infants. Aspiration of small quantities can result in airways inflammation and pneumonia. Barium should not be administered to patients with a history of foodstuff aspiration. In such patients in whom the barium procedure is absolutely necessary, it must be carried out with great care. In the event of aspiration into the larynx, product administration must be discontinued immediately.

Fluid overload

Fluid overload due to water absorption from barium sulfate suspensions has been reported. Children and patients with impaired renal function as well as children with Hirschsprung's disease are the most susceptible to water intoxication.

Intravasation

It is possible for barium sulfate to cross the intestinal wall and enter the venous drainage of the colon, allowing a barium embolism to reach the circulatory system. Intravasation occurs very rarely, but can result in fatal complications such as systemic and pulmonary embolism, disseminated intravascular coagulation, septicaemia and persistent severe hypotension.

The diagnosis should be considered in all patients who collapse during or after the barium procedure, and in patients who do not feel well in the first hours after the procedure. It can be confirmed by a plain X-ray examination. A CT scan may be useful in detecting dissemination of barium sulfate.

Barium impaction and barolith

Care should be taken in patients with pre-existing constipation, disturbed stomach emptying, colon stenosis, diverticulosis and colon atony, due to the risk of barium stercoroma, particularly in elderly subjects.

Barium sulfate can be retained in colonic diverticula where it can maintain or intensify infections.

Baroliths develop from inspissated barium in faeces. They are often asymptomatic but may cause abdominal pain, appendicitis, intestinal obstruction or intestinal perforation. The risk of developing baroliths is higher in elderly patients with impaired intestinal motility, ileus, electrolyte imbalance, dehydration or with fiber-deficient diets. To prevent any damage to the intestinal wall, the baroliths should be removed.

Barium sulfate can cause or aggravate pre-existing constipation.

To prevent severe constipation, barium impaction and barolith, a proper oral hydration should be ensured prior and several days after the examination, and mobilization will be encouraged after the examination. The use of laxatives should be considered (especially in the event of constipation). Patients presenting with constipation before the examination should be particularly monitored, because of the risk of coproma.

Other possible complications

- Vasovagal reactions, syncopal episodes, cardiac arrhythmia and other cardiovascular effects may occur after administration of barium sulfate. Such reactions are usually not predictable and are best treated if the patient remains under observation for 10 to 30 minutes.

Excipients

This medicinal product contains sorbitol. Patients with rare hereditary problems of fructose intolerance should not take this medicine.

This medicinal product contains 208.5 mg sodium per 150 ml of suspension, equivalent to 10% of the WHO recommended maximum daily intake of 2 g sodium for an adult. To be taken into consideration in patients on a controlled sodium diet.

This medicinal product contains 55 mg potassium per 150 ml of suspension. To be taken into consideration in patients with renal insufficiency or in patients on a controlled potassium diet.

This medicinal product contains "parahydroxybenzoates" and may cause hypersensitivity reactions (possibly delayed).

4.5 Interaction with other medicinal products and other forms of interaction

As barium sulfate is used alone as a contrast agent and as it is not absorbed, no interactions with medicinal products are expected. However, simultaneous administration of other drugs is not recommended, since their absorption may be reduced by barium sulfate. Special care should be taken if barium sulfate is administered simultaneously with medicines with narrow therapeutic margin.

The slow elimination of the barium results in the presence of opaque residue which can interfere with other radiological examinations such as urography or computed tomography if these are performed within the next few days.

4.6 Fertility, pregnancy and lactation

Pregnancy

There are no data from the use of barium sulfate in pregnant women. As a general rule, all radiological explorations of the gastrointestinal tract should be avoided in pregnant women.

Breast-feeding

There are no theoretical reasons to suppose that barium sulfate is excreted in the milk. Microcat can be used during breast-feeding.

4.7 Effects on ability to drive and use machines

Microcat has no or negligible influence on the ability to drive and use machines.

No studies on the effects on the ability to drive and use machines have been performed. However, the pharmacodynamic and pharmacokinetic properties of barium sulfate are not of a kind such as to influence the ability to drive and use machines.

4.8 Undesirable effects

Adverse reactions are presented in the following table by system organ class and by frequency according to the following categories: very common ($\geq 1/10$), common ($\geq 1/100$ to $1 < 1/10$), uncommon ($\geq 1/1\ 000$ to $1 < 1/100$), rare ($\geq 1/10\ 000$ to $< 1/1,000$), very rare ($< 1/10,000$), not known (cannot be estimated on the basis of available data).

System Organ Class	Frequency : adverse reaction
Blood and lymphatic system disorders	Unknown frequency: In case of intravasation: disseminated intravascular coagulation
Immune system disorders	Unknown frequency:

	Anaphylactic reaction, anaphylactoid reaction, hypersensitivity
Gastrointestinal disorders	Unknown frequency: Intestinal obstruction, vomiting, diarrhoea, abdominal pain, stercoroma, abdominal distension, constipation, nausea, flatulence In case of intestinal perforation: peritonitis
Respiratory, thoracic and mediastinal disorders	Unknown frequency: Pneumonia aspiration, pulmonary fibrosis
Nervous system disorders	Unknown frequency: Presyncope
Skin and subcutaneous tissue disorders	Unknown frequency: Urticaria, rash

Sodium methyl parahydroxybenzoate can cause hypersensitivity immediate and also delayed reactions.

Very rarely - though even after initial use - hypersensitivity reactions of varying intensity can occur with barium sulfate contrast agents. Should this occur, treatment must be discontinued immediately. Such reactions call for immediate medical treatment.

In very rare cases administration of barium sulfate can result in the formation of so-called baroliths.

In case of intestinal perforation, the passage of barium sulfate in the abdominal cavity can be the cause of abscesses, inflammations, peritonitis, granulomas and adhesions with possibly fatal outcome and the need for surgery.

In case of extra luminal passage of barium sulfate, exceptional cases of intravasation accompanied by a systemic diffusion of barium sulfate may occur, which can be potentially

fatal. The intravasation of barium sulfate may be responsible for deep venous embolism, shock, respiratory distress and disseminated intravascular coagulation.

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the Yellow Card Scheme

Website: www.mhra.gov.uk/yellowcard or search for the MHRA Yellow Card in the Google Play or Apple App Store.

4.9 Overdose

Overdose is extremely unlikely, as the product is taken only under the supervision of healthcare professional.

Cases of overdose have been reported with the ingestion of barium sulfate. The cases are usually asymptomatic. However some cases of abdominal pain were reported.

Oral overdose involves the risk of constipation with the formation of baroliths in extreme cases. The treatment consists of cleansing enemas and/or saline laxatives. If necessary, electrolyte imbalance can be restored by specific infusion therapy.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Barium sulfate containing X-ray contrast media, ATC code: V08BA01

Barium sulfate is used as a contrast medium for X-ray examination of the gastrointestinal tract.

5.2 Pharmacokinetic properties

Barium sulfate, which is practically insoluble in water, is hardly absorbed by the gastrointestinal tract.

5.3 Preclinical safety data

Barium sulfate preparations have been widely used in radiological examinations for many years. There has been no specific testing of these ingredients and no preclinical data are available.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Sorbitol (E420)
Xanthan gum (E415)
Citric acid anhydrous (E330)
Sodium citrate (E331)
Simeticone emulsion 30 %
Potassium sorbate (E202)
Sodium methyl parahydroxybenzoate (E219)
Saccharin sodium (E954)
Apricot flavour
Water purified

6.2 *Incompatibilities*

In the absence of compatibility studies, this medicinal product should not be mixed with other medicinal products.

6.3. Shelf life

3 years.

6.4. Special precautions for storage

Store below 25° C. Do not freeze. The suspension should be used within 2 hours of dilution.

6.5 Nature and contents of container

1. 150 mL barium suspension filled into 150 mL opaque polythene bottle (150 mL capacity).
2. 150 mL barium suspension filled into 500 mL translucent polythene bottle (520 mL capacity).

Not all pack sizes may be marketed.

6.6 Special precautions for disposal

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

7 MARKETING AUTHORISATION HOLDER

GUERBET

BP 57400

95943 Roissy CdG Cedex

FRANCE

8 MARKETING AUTHORISATION NUMBER

PL 12308/0007

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

21/02/2011

10 DATE OF REVISION OF THE TEXT

09/11/2020