

SUMMARY OF PRODUCT CHARACTERISTICS

1 NAME OF THE MEDICINAL PRODUCT

Micropaque 1 g/mL, oral or rectal suspension

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

For 100 mL of oral or rectal suspension:

Barium sulphate..... 100.00 g

Excipients with known effect:

Carmellose sodium..... 2.00 g

Sodium citrate dihydrate..... 0.50 g

Potassium sorbate (E202)..... 0.13 g

Sodium methyl parahydroxybenzoate (E219)..... 0.09 g

Sodium propyl parahydroxybenzoate (E217)..... 0.05 g

Vanilla-caramel flavour..... 0.05 g

Saccharin sodium (E954) 0.02 g

For a full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Oral or rectal suspension.

4 CLINICAL PARTICULARS

4.1 Therapeutic indications

This medicinal product is for diagnostic use only.
Radiological investigations of the gastro-intestinal tract.

4.2. Posology and method of administration

Shake well before use.

Adults

Oesophagus: Use 40 to 60 mL of undiluted Micropaque as required.

Stomach and Duodenum:

Fill Technique Use 150 to 250 mL Micropaque, either undiluted or diluted with up to an equal volume of water.

Double Contrast Technique Use 100 to 150 mL undiluted Micropaque, in conjunction with a CO₂-producing agent.

Small Intestine:

Follow Through Use 100 mL Micropaque, diluted with 150 mL water.

Enteroclysis Use 250 mL Micropaque, diluted with 750 to 1000 mL water.

Colon (Administered by Enema):

Fill Technique Use 500 mL Micropaque, diluted with 1000 mL water.

Double Contrast Technique Use 300 to 400 mL Micropaque, diluted to 600 mL with water.

Elderly :

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

Children :

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
- 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;
- Megacolon or toxic megacolon;
- Postoperative suture failure. Barium sulphate 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 sulphate 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 sulphate 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.

Double-contrast examination of the colon is sometimes poorly tolerated by elderly or overweight patients of limited mobility.

Precautions for use

Hypersensitivity

Patients who have already experienced a reaction during previous administration of barium sulphate present an increased risk of experiencing another reaction on subsequent administration of this contrast agent, or possibly other barium sulphate 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 sulphate may aggravate symptoms of of an existing asthma. In patients with asthma unbalanced by the treatment, the decision to use barium sulphate 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 sulphate 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

If the product is used orally, 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 sulphate can result in aspiration pneumonia. Aspiration into the tracheobronchial system is possible during oral administration to infants of barium sulphate 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 sulphate 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. In children with Hirschsprung's disease, it is advisable not to fill the colon completely, but rather to use only the fluid volume required for the diagnosis.

Intravasation

It is possible for barium sulphate to cross the intestinal wall and enter the venous drainage of the colon, allowing a barium embolism to reach the circulatory system. The introduction and positioning of the device used for the administration of contrast agent should be done carefully and correctly, with a reduced use of balloon catheter, to avoid any lesion to the wall. 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 probability of this complication is higher in elderly patients, whose rectal and vaginal walls are thinner, as well as in patients with colorectal disorders, in whom the intraluminal pressure is higher than the resistance of the colon wall during colitis, diverticulitis and intestinal obstruction. The complication has also been related to accidental vaginal placement of a rectal catheter consequently the correct location of the rectal catheter should be confirmed before starting enema.

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 sulphate.

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 sulphate 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 glucose and sucrose in vanilla-caramel aroma. Patients with rare hereditary problems of fructose intolerance, glucose / galactose malabsorption or sucrase / isomaltase insufficiency should not take this medicine.

This medicinal product contains 1.76 g sodium per 500 ml of suspension. To be taken into consideration in patients on a controlled sodium diet.

This medicinal product contains 170 mg of potassium per 500 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 Interactions with other medicaments and other forms of interaction

As barium sulphate 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 sulphate. Special care should be taken if barium sulphate 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 Pregnancy and lactation

Pregnancy

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

Lactation

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

4.7 Effects on 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 sulphate 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
Gastro-intestinal 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 and sodium propyl 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 sulphate contrast agents. Should this occur, treatment must be discontinued immediately. Such reactions call for immediate medical treatment.

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

In case of intestinal perforation, the passage of barium sulphate 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 sulphate, exceptional cases of intravasation accompanied by a systemic diffusion of barium sulphate may occur, which can be potentially fatal. The intravasation of barium sulphate 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

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 sulphate. 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.

Rectal use of large quantities of hypotonic barium sulphate suspensions may disturb electrolyte imbalance which can be prevented by adding sodium chloride to the enema liquid. If necessary, electrolyte homeostasis can be restored by specific infusion therapy.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

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

5.2 Pharmacokinetic properties

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

5.3 Preclinical safety data

Barium sulphate 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

Carmellose sodium Ph Eur,
Sodium citrate dihydrate Ph Eur,
Xanthan gum Ph Eur,
Potassium sorbate Ph Eur,
Sodium methyl parahydroxybenzoate Ph Eur,
Sodium propyl parahydroxybenzoate Ph Eur,
Vanilla/caramel flavour,
Saccharin sodium Ph Eur,
Sulphuric acid Ph Eur
Water purified Ph Eur.

6.2 Incompatibilities

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

6.3 Shelf life

24 months.

6.4 Special precautions for storage

Store below 25° C. Do not freeze.

6.5 Nature and contents of container

White HD polythene bottles with white polypropylene wadless screw caps, capacity 500 ml or 2 litres.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal

Any unused 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 12308/0005

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

21/02/2011

10 DATE OF REVISION OF THE TEXT

19/03/2015