E-Z-HD- barium sulfate powder, for suspension
E-Z-EM Canada Inc

HIGHLIGHTS OF PRESCRIBING INFORMATION
These highlights do not include all the information needed to use E-Z-HD safely and effectively. See full prescribing information for E-Z-HD.

E-Z-HD (barium sulfate) for oral suspension,
Initial U.S. Approval: 2016

RECENT MAJOR CHANGES

Warnings and Precautions (5.6)	2/2017

INDICATIONS AND USAGE

E-Z-HD, a radiographic contrast agent, is indicated for use in double-contrast radiographic examinations of the esophagus, stomach and duodenum to visualize the gastrointestinal (GI) tract in patients 12 years and older (1)

DOSAGE AND ADMINISTRATION

- Recommended reconstituted oral dose for adults and pediatric patients 12 years and older is between 65 mL to 135 mL (155 to 321 grams of barium sulfate, respectively) (2.1)
- Must reconstitute supplied powder with water prior to use. See Full Prescribing Information for reconstitution instructions (2.2)

DOSAGE FORMS AND STRENGTHS

For oral suspension: 334 grams of barium sulfate (98 % w/w) in a single-dose bottle for reconstitution(3)

CONTRAINDICATIONS

- Known or suspected perforation of the GI tract (4)
- Conditions associated to high risk of aspiration (4)
- Conditions associated to high risk of GI perforation (4)
- Known hypersensitivity to barium sulfate or any of the excipients of E-Z-HD (4)

WARNINGS AND PRECAUTIONS

- Emergency equipment and trained personnel should be immediately available for treatment of a serious hypersensitivity reaction (5.1)
- Intra-abdominal leakage: Caution is recommended in patient conditions like GI fistula, ulcer, inflammatory bowel disease, appendicitis or diverticulitis, severe stenosis or obstructing lesions of the GI tract (5.2)
- Patients should maintain adequate hydration in days following a barium sulfate procedure to avoid obstruction or impaction caused by baroliths (5.3)
- Aspiration: Caution is recommended in patients with history of food aspiration and in patients with known swallowing disorders (5.4)
- E-Z-HD is not intended for pediatric use from birth through 11 years of age (8.4)

ADVERSE REACTIONS

Common adverse reactions include nausea, vomiting, diarrhea and abdominal cramping (6)
To report SUSPECTED ADVERSE REACTIONS, contact Bracco Diagnostics Inc at 1-800-257-5181 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch
See 17 for PATIENT COUNSELING INFORMATION.

Revised: 2/2017

FULL PRESCRIBING INFORMATION: CONTENTS*

* Sections or subsections omitted from the full prescribing information are not listed.

FULL PRESCRIBING INFORMATION

1 INDICATIONS AND USAGE

E-Z-HD is indicated for use in double-contrast radiographic examinations of the esophagus, stomach and duodenum to help visualize the gastrointestinal (GI) tract in patients 12 years and older.

2 DOSAGE AND ADMINISTRATION

2.1 Recommended Dosage

The recommended dose of reconstituted E-Z-HD for adults and pediatric patients 12 years and olderis between 65 and 135 mL given orally (155 to 321 grams of barium sulfate, respectively). Volumes closer to 65 mL are recommended for the examination of the esophagus and volumes up to 135 mL are recommended for examination of the

entire upper GI tract.

2.2 Instructions for Reconstitution

The E-Z-HD powder must be reconstituted prior to administration by a healthcare provider according to the following instructions:

- Accurately measure 65 mL of water and add this water to the bottle containing the supplied E-Z-HD powder
- Replace cap securely on bottle and shake vigorously for 30 seconds
- Wait 5 minutes and re-shake bottle thoroughly. Reconstitution yields approximately 140 mL of E-Z-HD for oral suspension containing 2.38 grams of barium sulfate per mL

2.3 Administration Instructions

- Administer the reconstituted E-Z-HD for oral suspension immediately upon reconstitution
- To use with a straw, remove the adhesive label from top of the cap. Remove cap and use straw to push out cap liner. Replace cap
- Discard any unused suspension
- Advise patients to hydrate following the barium sulfate procedure

3 DOSAGE FORMS AND STRENGTHS

For oral suspension: 334 grams of barium sulfate supplied as a fine, white to lightly colored powder (98 % w/w) in a single-dose HDPE plastic bottle for reconstitution. The suspension is 238% w/v when reconstituted and should be homogeneous and white to lightly colored.

4 CONTRAINDICATIONS

E-Z-HD is contraindicated in patients:

- Known or suspected perforation of the GI tract
- Known obstruction of the GI tract
- At high risk of GI perforation such as those with a recent prior GI perforation, acute GI hemorrhage or ischemia, toxic megacolon, severe ileus, post GI surgery or biopsy, acute GI injury or burn, or recent radiotherapy to the pelvis
- At high risk of aspiration such as those with prior aspiration, tracheo-esophageal fistula, or obtundation
- With known severe hypersensitivity to barium sulfate or any of the E-Z-HD excipients

5 WARNINGS AND PRECAUTIONS

5.1 Hypersensitivity Reactions

Barium sulfate preparations contain a number of excipients, including natural and artificial flavors and may induce serious hypersensitivity reactions. The manifestations include hypotension, bronchospasm and other respiratory impairments, dermal reactions including rashes, urticaria, and itching. A history of bronchial asthma, atopy, or a previous reaction to a contrast agent may increase the risk for hypersensitivity

reactions. Emergency equipment and trained personnel should be immediately available for treatment of a hypersensitivity reaction.

5.2 Intra-abdominal Barium Leakage

The use of E-Z-HD is contraindicated in patients at high risk of perforation of the GI tract *[see Contraindications (4)].* Administration of E-Z-HD may result in leakage of barium from the GI tract in the presence of conditions such as carcinomas, GI fistula, inflammatory bowel disease, gastric or duodenal ulcer, appendicitis, or diverticulitis, and in patients with a severe stenosis at any level of the GI tract, especially if it is distal to the stomach. The barium leakage has been associated with peritonitis and granuloma formation.

5.3 Delayed Gastrointestinal Transit and Obstruction

Orally administered barium sulfate may accumulate proximal to a constricting lesion of the colon, causing obstruction or impaction with development of baroliths (inspissated barium associated with feces) and may lead to abdominal pain, appendicitis, bowel obstruction, or rarely perforation. Patients with the following conditions are at higher risk for developing obstruction or baroliths: severe stenosis at any level of the GI tract, impaired GI motility, electrolyte imbalance, dehydration, on a low residue diet, taking medications that delay GI motility, constipation, pediatric patients with cystic fibrosis or Hirschsprung disease, and the elderly *[see Use in Specific Populations (8.4, 8.5)]*. To reduce the risk of delayed GI transit and obstruction, patients should maintain adequate hydration during and in the days following a barium sulfate procedure. Consider the administration of laxatives.

5.4 Aspiration Pneumonitis

The use of E-Z-HD is contraindicated in patients at high risk of aspiration *[see Contraindications (4)]*. Oral administration of barium is associated with aspiration pneumonitis, especially in patients with a history of food aspiration or with compromised swallowing mechanism. Vomiting following oral administration of barium sulfate may lead to aspiration pneumonitis. In patients at risk for aspiration, begin the procedure with a small ingested volume of E-Z-HD. Discontinue administration of E-Z-HD immediately if aspiration is suspected.

5.5 Systemic Embolization

Barium sulfate products may occasionally intravasate into the venous drainage of the large bowel and enter the circulation as a "barium embolus" leading to potentially fatal complications which include systemic and pulmonary embolism, disseminated intravascular coagulation, septicemia and prolonged severe hypotension. Although this complication is exceedingly uncommon after oral administration of a barium sulfate suspension, monitor patients for potential intravasation when administering barium sulfate.

5.6 Risk with Hereditary Fructose Intolerance

E-Z-HD contains sorbitol which may cause severe reactions if ingested by patients with hereditary fructose intolerance, such as: vomiting, hypoglycemia, jaundice, hemorrhage, hepatomegaly, hyperuricemia, and kidney failure. Before administration of E-Z-HD

assess patients for a history of hereditary fructose intolerance and avoid use in these patients.

6 ADVERSE REACTIONS

The following adverse reactions have been identified from spontaneous reporting or clinical studies of barium sulfate administered orally. Because the reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or to establish a causal relationship to drug exposure

- Nausea, vomiting, diarrhea and abdominal cramping
- Serious adverse reactions and fatalities include aspiration pneumonitis, barium sulfate impaction, intestinal perforation with consequent peritonitis and granuloma formation, vasovagal and syncopal episodes

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Risk Summary

E-Z-HD is not absorbed systemically following oral administration, and maternal use is not expected to result in fetal exposure to the drug.

8.2 Lactation

Risk Summary
E-Z-HD is not absorbed systemically by the mother following oral administration, and breastfeeding is not expected to result in exposure of the infant to E-Z-HD.

8.4 Pediatric Use

Double-contrast radiographic examinations of the esophagus, stomach and duodenum may be used in pediatric patients 12 years and older.

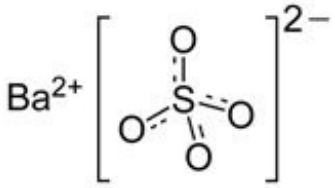
E-Z-HD is contraindicated in pediatric patients with tracheo-esophageal fistula. *[see Contraindications (4)].* Pediatric patients with a history of asthma or food allergies may be at increased risk for development of hypersensitivity reactions [*see Warnings and Precautions (5.1)].* Pediatric patients with cystic fibrosis or Hirschsprung disease should be monitored for bowel obstruction after use *[see Warnings and Precautions (5.3)]*

8.5 Geriatric Use

Clinical studies of E-Z-HD did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences in responses between the elderly and younger patients. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy.

11 DESCRIPTION

E-Z-HD (barium sulfate) is a radiographic contrast agent that is supplied as a fine, white to lightly colored powder for suspension (98 % w/w) for oral administration. The active ingredient barium sulfate is designated chemically as $BaSO_4$ with a molecular weight of 233.43 g/mol, a density of 4.5 g/cm^3, and the following chemical structure:



E-Z-HD contains excipients including: acacia, artificial cherry flavor, artificial strawberry flavor, carrageenan, citric acid, ethyl maltol, polysorbate 80, saccharin sodium, simethicone, sodium citrate, and sorbitol.

12 CLINICAL PHARMACOLOGY

12.1 Mechanism of Action

Due to its high atomic number, barium (the active ingredient in E-Z-HD) is opaque to x-rays and therefore acts as a positive contrast agent for radiographic studies.

12.3 Pharmacokinetics

Under physiological conditions, barium sulfate passes through the GI tract in an unchanged form and is absorbed only in pharmacologically insignificant amounts.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

No animal studies have been performed to evaluate the carcinogenic potential of barium sulfate or potential effects on fertility.

16 HOW SUPPLIED/STORAGE AND HANDLING

16.1 How Supplied

E-Z-HD (barium sulfate) for suspension, is supplied as a fine, white to lightly colored powder (98 % w/w) in a single-dose HDPE plastic bottle containing 334 grams of barium sulfate.

Provided as: 24 bottles per pack (NDC 32909-764-01)

16.2 Storage and Handling

Store at USP controlled room temperature, 20 to 25°C (68 to 77° F).

17 PATIENT COUNSELING INFORMATION

After administration advise patients to:

- Maintain adequate hydration
- Seek medical attention for worsening of constipation or slow gastrointestinal passage
- Seek medical attention for any delayed onset of hypersensitivity: rash, urticaria, or respiratory difficulty

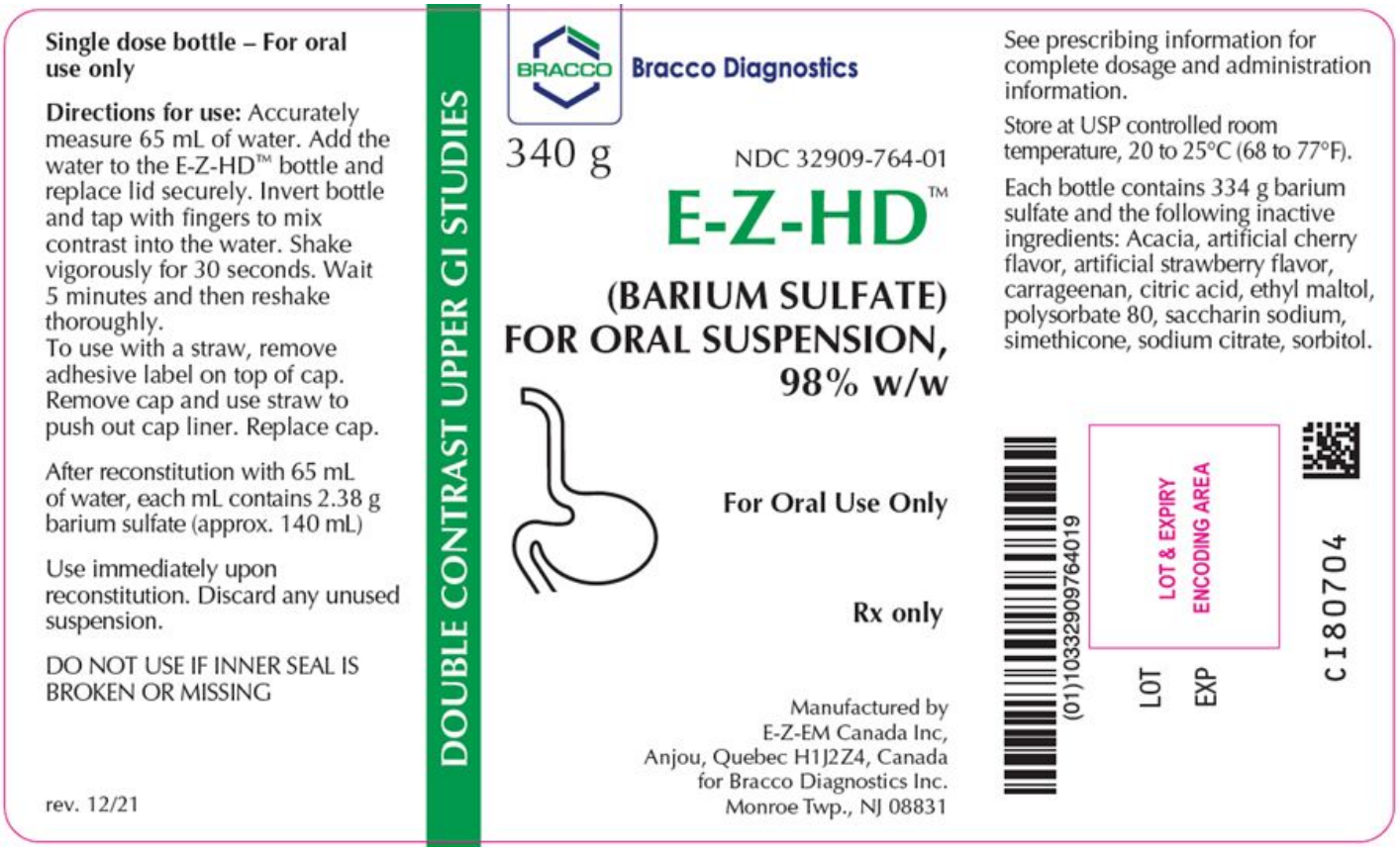
Manufactured by
EZEM Canada Inc
Anjou (Quebec) Canada H1J 2Z4

For
Bracco Diagnostics Inc.
Monroe Township, NJ 08831

CL80608

Revised December 2021

EZ-HD Labels
NDC: 32909-764-01



E-Z-HD

barium sulfate powder, for suspension

Product Information			
Product Type	HUMAN PRESCRIPTION DRUG	**Item Code (Source)**	NDC:32909-764
Route of Administration	ORAL		

Active Ingredient/Active Moiety		
Ingredient Name	**Basis of Strength**	**Strength**
Barium Sulfate (UNII: 25BB7EKE2E) (Barium Sulfate - UNII:25BB7EKE2E)	Barium Sulfate	980 mg in 1 g

Inactive Ingredients	
Ingredient Name	**Strength**
acacia (UNII: 5C5403N26O)	
anhydrous citric acid (UNII: XF417D3PSL)	
dimethicone 1000 (UNII: MCU2324216)	
ethyl maltol (UNII: L6Q8K29L05)	
polysorbate 80 (UNII: 6OZP39ZG8H)	
saccharin sodium (UNII: SB8ZUX40TY)	
silicon dioxide (UNII: ETJ7Z6XBU4)	

trisodium citrate dihydrate (UNII: B22547B95K)	
sorbitol (UNII: 506T60A25R)	
carrageenan sodium (UNII: 7CY8BVL34N)	

Product Characteristics

Color	WHITE	**Score**	
Shape		**Size**	
Flavor	STRAWBERRY, CHERRY	**Imprint Code**	
Contains			

Packaging

#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:32909-764-01	24 in 1 CARTON	04/18/2016	
1		340 g in 1 BOTTLE; Type 0: Not a Combination Product		

Marketing Information

Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date
NDA	NDA208036	01/11/2016	

Labeler - E-Z-EM Canada Inc (204211163)

Registrant - BRACCO DIAGNOSTICS INC (849234661)

Establishment

Name	Address	ID/FEI	Business Operations
CIMBAR PERFORMANCE MINERALS, INC.		963805671	API MANUFACTURE(32909-764)

Establishment

Name	Address	ID/FEI	Business Operations
E-Z-EM Canada Inc		204211163	ANALYSIS(32909-764) , MANUFACTURE(32909-764) , PACK(32909-764) , LABEL(32909-764)

Revised: 11/2022 E-Z-EM Canada Inc