LIPIODOL ULTRA-FLUID. Composition: Ethyl esters of iodized fatty acids of poppy seed oil 10 mL, corresponding to an iodine content of 480 mg/mL. **Indications (**):** For diagnostic radiology – Lymphography - Hysterosalpingography - Hysterosalpingography in women undergoing infertility work up - Sialography - Ascending urethrography –- Fistulography and exploration of abscesses - Exploration of frontal sinuses - Pre and post-operative cholangiography. For interventional radiology – Visualisation and localization (by selective intra-arterial use during CT) of liver lesions in adults with known or suspected hepatocellular carcinoma - Visualisation, localisation and vectorisation during Trans-Arterial Chemo-Embolisation (TACE) of hepatocellular carcinoma at intermediate stage, in adults - Visualisation and localisation of hepatocellular carcinoma at intermediate stage in adults - Selective embolization in combination with Histoacryl glue (particularly for arteriovenous malformation or aneurysms) – Selective injections of LIPIODOL ULTRA-FLUID into the hepatic artery for diagnostic purposes where a spiral CT scan is not practical -. In endocrinology - Prevention of severe cases of iodine deficiency. This treatment should only be used when other methods of supplementation, particularly iodization of salt and/or drinking water, cannot be undertaken. **Posology and method of administration (*) (**):** have to be adapted according to the type of examination, the territories explored, the age and weight of the patient. The volume to be administered depends on the requirements of the technique and the size of the patient. The total volume should not exceed 15 mL in interventional radiology and in hysterosalpingography. Lipiodol Ultra Fluid must be administered by slow injection or via a catheter, using a suitable glass syringe or other administration devices proven to be compatible with Lipiodol Ultra Fluid. The instructions for use of these devices must be followed. **Contraindications:** Hypersensitivity to LIPIODOL ULTRA-FLUID - Manifest hyperthyroidism - Patients with traumatic injuries, recent hemorrhage or bleeding – Hysterosalpingography during pregnancy or acute pelvic inflammation– Bronchography. Interventional radiology: Intra-arterial administration of chemotherapy / Lipiodol Ultra-fluid mixture for treatment of hepatocellular carcinoma may lead to both ischemic and toxic effects to the bile ducts. Therefore, the treatment is contraindicated in areas of the liver where the bile ducts are dilated, unless post-procedural drainage can be performed.

Special warnings and precautions for use (*):

Lipiodol Ultra-Fluid must not be administered by systemic intravascular route or intrathecal route. There is a risk of hypersensitivity, regardless of the dose administered.

All indications: ***Hypersensitivity:*** All iodinated contrast agents can lead to minor or major hypersensitivity reactions, which can be life-threatening. These hypersensitivity reactions are of an allergic nature (known as anaphylactic reactions if they are serious) or a non-allergic nature. They can be immediate (occurring within 60 min) or delayed (not occurring until up to 7 days later). Anaphylactic reactions are immediate and can be fatal. They are dose-independent, can occur right from the first administration of the product, and are often unforeseeable. The risk of a major reaction means that the equipment needed for emergency resuscitation must be immediately to hand. Patients who have already experienced a reaction after a previous administration of Lipiodol Ultra Fluid or who have a history of iodine hypersensitivity are at increased risk of another reaction on re-administration of the product and are thus regarded as at-risk patients. The injection of Lipiodol Ultra Fluid may aggravate symptoms of an existing asthma. In patients with asthma unbalanced by the treatment, the decision to use Lipiodol Ultra Fluid must be made after careful evaluation of the risk/benefit ratio. ***Thyroid dysfunction:*** Iodinated contrast media can affect thyroid function because of the free iodine they contain and can cause hyperthyroidism in predisposed patients. Patients at risk are those with latent hyperthyroidism and those with functional thyroid autonomy. Iodism occurs more frequently with Lipiodol Ultra Fluid than with water-soluble organic iodine derivatives. ***Embolic and thrombotic complications:*** The uncontrolled migration of Lipiodol Ultra Fluid into the arterio-venous system may induce the temporary obliteration of small vessels (oil embolism) in various organs. Evidence of such embolisation is infrequent, usually immediate but can also be delayed occurring after a few hours or days and is usually transient. Most reported localizations of such an event include pulmonary embolisms, cerebral embolisms (which could lead to cerebral infarction) and skin embolisms (which could lead to skin necrosis). Patients should be warned of the possible signs of embolism and should contact their doctor or hospital if any symptoms emerge.

Specific warnings related to lymphography: Pulmonary embolization occurs in a majority of patients following lymphography with Lipiodol Ultra Fluid, due to a portion of the product temporarily embolizing the pulmonary capillaries. The dose should be adapted or the examination itself cancelled in subjects with impaired lung function, cardiorespiratory failure, or pre-existing right-sided cardiac overload, in particular elderly patients. Radiological or radioscopic monitoring during the injection is recommended. The occurrence of pulmonary invasion may be minimized if radiographic confirmation of intralymphatic (rather than venous) injection is secured, and the procedure discontinued when the medium becomes visible in the thoracic duct or the presence of lymphatic obstruction is noticed. Lymphography saturates the thyroid with iodine for several months and may induce thyroid dysfunction. Any thyroid exploration should be performed before the radiological examination.

Specific warnings related to Visualisation / localisation / chemoembolisation of liver tumours: Trans-arterial chemo-embolisation is not recommended in patients with decompensated liver cirrhosis (Child-Pugh score ≥8), advanced liver dysfunction, macroscopic portal vein invasion and/or extra-hepatic spread of the tumour. Hepatic intra-arterial procedures can cause an irreversible liver insufficiency in patients with serious liver malfunction and/or undergoing close multiple sessions. More than 50% liver replacement with tumour, bilirubin level greater than 2 mg/dL, lactate dehydrogenase level greater than 425 mg/dL, aspartate aminotransferase level greater than 100 IU/L, and decompensated cirrhosis have been described as associated with increased post-procedural mortality. Esophageal varices must be carefully monitored as they can rupture immediately after treatment. If a risk of rupture is demonstrated, endoscopic sclerotherapy / ligature should be performed before the TACE procedure. Iodinated contrast agent induced renal insufficiency must be systematically prevented by correct rehydration before and after the procedure. The risk of superinfection in the treated area is normally prevented by administration of antibiotics.

Specific warnings related to embolisation with surgical glue: Early polymerisation reaction can occasionally occur with Lipiodol Ultra-Fluid and any surgical glue or any batch of glue. Before using new batches of Lipiodol Ultra-Fluid or surgical glue the compatibility between the Lipiodol Ultra-Fluid and glue must be checked in vitro. Off-targeted embolization of various parts of the body may also occur in the context of selective embolisation in combination with Histoacryl glue. The embolisation property of the glue should be considered as part of the embolization process. Patients should be closely monitored for embolic complication in a care setting deemed appropriate by the treating clinician.
Specific warnings related to Hysterosalpingography: Intravasation of Lipiodol Ultra Fluid may occur in the course of a hysterosalpingography procedure and may result in serious pulmonary or cerebral embolic complications in the next hours following the procedure. The hysterosalpingography procedure should be immediately interrupted in case of suspected or confirmed intravasation of Lipiodol Ultra Fluid. The patient should be closely monitored for embolic complication in a care setting deemed appropriate by the treating clinician. When used in hysterosalpingography in patients at risk of hypothyroidism, close monitoring of thyroid function and follow-up of hypothyroidism should be undertaken several months after examination. The Lipiodol Ultra Fluid dose should be as low as possible to minimize the potential risk of thyroid dysfunction.
Interaction with other medicinal products and other forms of interaction (*): Metformin, Beta blockers, vasoactive substances, angiotensin-converting enzyme inhibitors, angiotensin-receptor blockers, Diuretics, Interleukin II. **Fertility, pregnancy and lactation (*):** LIPIODOL ULTRA-FLUID must only be used in pregnant women if absolutely necessary and under strict medical supervision. Breastfeeding should be discontinued if LIPIODOL ULTRA-FLUID must be used - **Effects on ability to drive and use machines:** The effects on ability to drive and to use machines have not been investigated - **Undesirable effects(*):** Most adverse effects are dose-related and dosage should therefore be kept as low as possible :hypersensitivity, anaphylactic reaction, anaphylactoid reaction, hypothyroidism, hyperthyroidism, thyroiditis, goiter[b], cerebral embolism, cerebral infarction, hepatic encephalopathy [a] , retinal vein thrombosis, lymphoedema aggravation, pulmonary embolism, dyspnea, cough, pulmonary oedema [a], pleural effusion [a], acute respiratory distress syndrome [a], pneumonitis [a] , vomiting, diarrhea, nausea, pancreatitis [a] , ascites [a], hepatic vein thrombosis, cholecystitis [a], biloma [a], hepatic failure [a], hepatic infarction [a] , granuloma, fever, pain, Liver abscess [a] , Skin necrosis [a], Venous intravasation[b]. **Overdose (*):** The total dose of LIPIODOL ULTRA-FLUID administered must not exceed 20 mL - **Pharmacodynamic properties (*):** Pharmacotherapeutic group: X-ray contrast media, iodinated; ATC code: V08A D01.
Water-insoluble iodinated contrast medium. **Presentation (**)**: 10 mL glass ampoule. **Marketing authorization holder (*)**: Guerbet - BP 57400 - F-95943 Roissy CdG cedex – FRANCE. Information: tel: 33 (0) 1 45 91 50 00. Revision: November 20th, 2023.

(a) in the context of TAE or TACE
(b) In the context of HSG

(*) For current and complete prescribing information refer to the local Summary of Product Characteristics (SmPC) and /or contact your local Guerbet organization.
(**) This information is intended for an international audience or is provided during an international event. Be aware that Indications, posology and presentations may differ from country to country.

Reporting of suspected adverse reactions is important as it helps to continuously assess the benefit-risk balance. Therefore, Guerbet encourages you to report any adverse reactions to your health authorities or to our local Guerbet representative.