

# Summary of Product Characteristics

## 1 NAME OF THE MEDICINAL PRODUCT

Ibuprofen 200 mg soft capsules

## 2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each capsule contains Ibuprofen 200 mg

Excipients with known effect: Also contains 18.67 mg Potassium per capsule.

For the full list of excipients, see section 6.1.

## 3 PHARMACEUTICAL FORM

Capsule, soft.

Transparent, oval shaped soft gelatin capsule, printed 'BL200' in white ink, containing clear solution.

## 4 CLINICAL PARTICULARS

### 4.1 Therapeutic indications

Adults and children over 12 years:

Ibuprofen 200mg soft capsules are indicated as an anti-inflammatory, analgesic and antipyretic for short term management of mild to moderate pain, fever and inflammation associated with headache, dental pain, period pain, muscular strain, neuralgia, rheumatic pain and migraine and for the management of the symptoms of head colds and influenza.

### 4.2 Posology and method of administration

#### Posology

#### **Adults, the elderly and children over 12 years:**

The lowest effective dose should be used for the shortest duration necessary to relieve symptoms (see section 4.4). If in children and adolescents this medicinal product is required for more than 3 days, or if symptoms worsen a doctor should be consulted. Adults should consult a doctor if symptoms persist or worsen, or if the product is required for more than 10 days.

**Adults, the elderly and children over 12 years:** 200- 400mg taken with water up to three times a day as required Leave at least four hours between doses with a maximum of 1200mg in any 24 hour period.

#### **Not for use by children under 12 years of age.**

**Elderly:** NSAIDs should be used with particular caution in elderly patients who are more prone to adverse events. The lowest dose compatible with adequate safe clinical control should be employed (See Section 4.4).

#### Method of administration

For oral administration and short-term use only.

### 4.3 Contraindications

- Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.
- Patients who have previously shown hypersensitivity reactions (e.g. asthma, rhinitis, angioedema, or urticaria) in response to aspirin or other non-steroidal anti-inflammatory drugs (NSAIDs).
- Active or history of recurrent peptic ulcer/haemorrhage (two or more distinct episodes of proven ulceration or bleeding).
- Patients with a history of, or existing gastrointestinal ulceration/perforation or bleeding, including that associated with NSAIDs. (See Section 4.4)
- Use in children under 12 years of age.

- Patients with severe hepatic failure, severe renal failure or severe heart failure (NYHA Class IV). See also Section 4.4
- Last trimester of pregnancy (see section 4.6)

#### 4.4 Special warnings and precautions for use

Undesirable effects may be minimised by using the lowest effective dose for the shortest duration necessary to relieve symptoms (see GI and cardiovascular risks below).

If symptoms persist for more than 3 days, patients should be advised to consult their doctor.

##### ***Elderly:***

The elderly have an increased frequency of adverse reactions to NSAIDs especially gastrointestinal bleeding and perforation which may be fatal. (see Section 4.2).

Prolonged use of NSAIDs in the elderly is not recommended. Where prolonged therapy is required, patients should be reviewed regularly.

##### ***Respiratory:***

Bronchospasm may be precipitated in patients suffering from, or with a previous history of, bronchial asthma or allergic disease.

##### ***Other NSAIDs:***

The use of ibuprofen with concomitant NSAIDs including cyclooxygenase-2 selective inhibitors should be avoided (see section 4.5)

##### ***SLE and mixed connective tissue disease:***

Caution is advised in patients with Systemic lupus erythematosus as well as those with mixed connective tissue disease - due to increased risk of aseptic meningitis (see section 4.8).

##### ***Renal:***

Caution is required in renal impairment as renal function may further deteriorate (see sections 4.3 and 4.8)

The dose should be as low as possible and renal function should be monitored.

There is a risk of renal impairment in dehydrated children and adolescents

##### ***Hepatic:***

Hepatic dysfunction (see Sections 4.3 and 4.8)

##### ***Cardiovascular and cerebrovascular effects:***

Caution (discussion with doctor or pharmacist) is required prior to starting treatment in patients with a history of hypertension and/or heart failure as fluid retention, hypertension and oedema have been reported in association with NSAID therapy.

Clinical trial and epidemiological data suggest that the use of ibuprofen, particularly at high doses (2400 mg/daily) and in long term treatment may be associated with a small increased risk of arterial thrombotic events (for example myocardial infarction or stroke). Overall, epidemiological studies do not suggest that low dose ibuprofen (e.g.  $\leq 1200$ mg/day) is associated with an increased risk of arterial thrombotic events. Patients with uncontrolled hypertension, congestive heart failure (NYHA II-III), established ischaemic heart disease, peripheral arterial disease, and/or cerebrovascular disease should only be treated with ibuprofen after careful consideration and high doses (2400 mg/day) should be avoided.

Careful consideration should also be exercised before initiating long-term treatment of patients with risk factors for cardiovascular events (e.g. hypertension, hyperlipidaemia, diabetes mellitus, smoking), particularly if high doses of ibuprofen (2400 mg/day) are required.

Cases of Kounis syndrome have been reported in patients treated with Ibuprofen 200mg soft capsules. Kounis syndrome has been defined as cardiovascular symptoms secondary to an allergic or hypersensitive reaction associated with constriction of coronary arteries and potentially leading to myocardial infarction.

##### ***Impaired female fertility:***

There is some evidence that drugs which inhibit cyclo-oxygenase/ prostaglandin synthesis may cause impairment of female fertility by an effect on ovulation. This is reversible on withdrawal of treatment. Prolonged use of any type of painkiller for headaches can make them worse. If this situation is experienced or suspected, medical advice should be obtained and treatment should be discontinued. The diagnosis of 'Medication Overuse Headache' should be suspected in patients who have frequent or daily headaches despite (or because of) the regular use of headache medications.

##### ***Gastrointestinal effects:***

NSAIDs should be given with care to patients with a history of gastrointestinal disease (ulcerative colitis, Crohn's disease) as these conditions may be exacerbated (see section 4.8- undesirable effects).

GI bleeding, ulceration or perforation, which can be fatal has been reported with all NSAIDs at any time during treatment, with or without warning symptoms or a previous history of GI events.

The risk of GI bleeding, ulceration or perforation is higher with increasing NSAIDs doses, in patients with a history of ulcer, particularly if complicated with haemorrhage or perforation (see section 4.3), and in the elderly. These patients should commence treatment on the lowest dose available. Combination therapy with protective agents (e.g. misoprostol or proton pump inhibitors) should be considered for these patients, and also for patients requiring concomitant low dose aspirin, or other drugs likely to increase gastrointestinal risk (see below and 4.5).

Patients with a history of GI toxicity, particularly the elderly, should report any unusual abdominal symptoms (especially GI bleeding) particularly in the initial stages of treatment.

Caution should be advised in patients receiving concomitant medications which could increase the risk of ulceration or bleeding, such as oral corticosteroids, anticoagulants such as warfarin, selective serotonin-reuptake inhibitors or anti-platelet agents such as aspirin (see section 4.5).

When GI bleeding or ulceration occurs in patients receiving ibuprofen, the treatment should be withdrawn.

***Severe cutaneous adverse reactions (SCARs):*** Severe cutaneous adverse reactions (SCARs) including exfoliative dermatitis, erythema multiforme, Stevens-Johnson syndrome (SJS), and toxic epidermal necrolysis (TEN), Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS syndrome), and acute generalized exanthematous pustulosis (AGEP), which can be life-threatening or fatal, have been reported in association with the use of ibuprofen (see section 4.8). Most of these reactions occurred within the first month. If signs and symptoms suggestive of these reactions appear ibuprofen should be withdrawn immediately and an alternative treatment considered (as appropriate). Exceptionally, varicella can be at the origin of serious cutaneous and soft tissue infectious complications. To date, the contributing role of NSAIDs in the worsening of these infections cannot be ruled out. Thus, it is advisable to avoid this medicine in case of varicella.

#### ***Blood effects:***

As NSAIDs can interfere with platelet function, they should be used with caution in patients with idiopathic thrombocytopenic purpura (ITP), intracranial haemorrhage and bleeding diathesis.

#### ***Masking of symptoms of underlying infections:***

Ibuprofen can mask symptoms of infection, which may lead to delayed initiation of appropriate treatment and thereby worsening the outcome of the infection. This has been observed in bacterial community acquired pneumonia and bacterial complications to varicella. When Ibuprofen is administered for fever or pain relief in relation to infection, monitoring of infection is advised. In nonhospital settings, the patient should consult a doctor if symptoms persist or worsen.

#### **Important information regarding the ingredients of this medicine**

**Potassium:** This medicine contains 18.75 mg of Potassium per capsule. To be taken into consideration by patients with reduced kidney function or patients on a controlled potassium diet.

### **4.5 Interaction with other medicinal products and other forms of interaction**

#### **Ibuprofen (like other NSAIDs) should be avoided in combination with:**

- **Aspirin (acetylsalicylic acid):** Concomitant administration of ibuprofen and acetylsalicylic acid is not generally recommended because of the potential of increased adverse effects.

Experimental data suggest that ibuprofen may competitively inhibit the effect of low dose aspirin (acetylsalicylic acid) on platelet aggregation when they are dosed concomitantly. Although there are uncertainties regarding extrapolation of these data to the clinical situation, the possibility that regular, long-term use of ibuprofen may reduce the cardioprotective effect of low-dose acetylsalicylic acid cannot be excluded. No clinically relevant effect is considered to be likely for occasional ibuprofen use (see section 5.1).

- **Other NSAIDs including cyclooxygenase-2 selective inhibitors:** Avoid concomitant use of two or more NSAIDs as this may increase the risk of adverse effects (see section 4.4)

#### **Ibuprofen should be used with caution in combination with:**

- **Corticosteroids:** as these may increase the risk of gastrointestinal ulceration or bleeding (see Section 4.4)
- **Antihypertensives and diuretics:** NSAIDs may reduce the effect of diuretics and other antihypertensive drugs. In some patients with compromised renal function (e.g. dehydrated patients or elderly patients with compromised renal function) the co-administration of an ace inhibitor or Angiotensin II antagonist and agents that inhibit cyclo-oxygenase may result in further deterioration of renal function, including possible acute renal failure, which is usually reversible. These interactions should be considered in patients taking ibuprofen concomitantly with ACE inhibitors or angiotensin II antagonists. Therefore, the combination should be administered with caution, especially in the elderly. Patients should be adequately hydrated and consideration should be given to monitoring of renal function after initiation of concomitant therapy and periodically thereafter. Diuretics can increase the risk of nephrotoxicity of NSAIDs.
- **Anticoagulants:** NSAIDs may enhance the effects of anti-coagulants, such as warfarin (See section 4.4). It is considered unsafe to take NSAIDs in combination with warfarin or heparin unless under direct medical supervision.
- **Anti-platelet agents and selective serotonin reuptake inhibitors (SSRIs):** increased risk of gastrointestinal bleeding (see section 4.4).
- **Cardiac glycosides:** NSAIDs may exacerbate cardiac failure, reduce GFR and increase plasma glycoside levels.
- **Aminoglycosides:** reduction in renal function in susceptible individuals, decreased elimination of aminoglycoside and increased plasma concentrations.
- **Lithium:** decreased elimination of lithium.

**Methotrexate:** decreased elimination of methotrexate.

- **Cyclosporin:** Increased risk of nephrotoxicity with NSAIDs.
- **Mifepristone:** NSAIDs should not be used for 8-72 days after mifepristone administration as NSAIDs can reduce the effect of mifepristone.
- **Tacrolimus:** Possible increased risk of nephrotoxicity when NSAIDs are given with tacrolimus.
- **Zidovudine:** Increased risk of haematological toxicity when NSAIDs are given with zidovudine. There is evidence of an increased risk haemarthroses and haematoma in HIV (+) haemophiliacs receiving concurrent treatment with zidovudine and ibuprofen.
- **Quinolone antibiotics:** Animal data indicate that NSAIDs can increase the risk of convulsions associated with quinolone antibiotics. Patients taking NSAIDs and quinolones may have an increased risk of developing convulsions.
- **Probenecid:** reduction in metabolism and elimination of NSAIDs and metabolites.
- **Oral hypoglycaemic agents:** inhibition of metabolism of sulfonylurea drugs, prolonged half-life and increased risk of hypoglycaemia.

#### 4.6 Fertility, pregnancy and lactation

##### **Pregnancy:**

Inhibition of prostaglandin synthesis may adversely affect the pregnancy and/or the embryo/foetal development. Data from epidemiological studies suggest an increased risk of miscarriage and of cardiac malformation and gastroschisis after use of a prostaglandin synthesis inhibitor in early pregnancy. The absolute risk for cardiovascular malformation was increased from less than 1%, up to approximately 1.5%. The risk is believed to increase with dose and duration of therapy. In animals, administration of a prostaglandin synthesis inhibitor has been shown to result in increased pre- and post-implantation loss and embryo-foetal lethality. In addition, increased incidences of various malformations, including cardiovascular, have been reported in animals given a prostaglandin synthesis inhibitor during the organogenetic period.

From the 20th week of pregnancy onward, ibuprofen use may cause oligohydramnios resulting from foetal renal dysfunction. This may occur shortly after treatment initiation and is usually reversible upon discontinuation. In addition, there have been reports of ductus arteriosus construction following treatment in the second trimester, most of which resolved after treatment cessation. Therefore, during the first and second trimester of pregnancy, ibuprofen should not be given unless clearly necessary. If ibuprofen is used by a woman attempting to conceive, or during the first and second trimester of pregnancy, the dose should be kept as low and duration of treatment as short as possible. Antenatal monitoring for oligohydramnios and ductus arteriosus constriction should be considered after exposure to Ibuprofen 200 mg soft capsules for several days from gestational week 20 onward. Ibuprofen 200 mg soft capsules should be discontinued if oligohydramnios or ductus arteriosus constriction are found.

During the third trimester of pregnancy, all prostaglandin synthesis inhibitors may expose the foetus to:

- cardiopulmonary toxicity (premature constriction /closure of ductus arteriosus and pulmonary hypertension);
- renal dysfunction (see above);

The mother and the neonate, at the end of pregnancy to:

- possible prolongation of bleeding time, an anti-aggregating effect which may occur even at very low doses;
- inhibition of uterine contractions resulting in delayed or prolonged labour

Consequently, ibuprofen is contraindicated during the third trimester of pregnancy (see section 4.3 and 5.3).

#### **Breast-feeding:**

Ibuprofen and its metabolites can pass in very small concentrations (0.0008% of the maternal dose) into the breast milk and is unlikely to affect the breast-fed infant adversely. No harmful effects to infants are known, so it is not necessary to interrupt breast-feeding for short-term treatment with the recommended dose for mild to moderate pain and fever.

#### **Fertility:**

There is limited evidence that drugs which inhibit cyclo-oxygenase/ prostaglandin synthesis may cause impairment of female fertility by an effect on ovulation. This is reversible on withdrawal of treatment.

### **4.7 Effects on ability to drive and use machines**

None expected at recommended dose and duration of therapy.

### **4.8 Undesirable effects**

The list of the following adverse events relates to those experienced with ibuprofen at OTC doses (maximum 1200mg per day) in short-term use. In the treatment of chronic conditions, under long-term treatment, additional adverse events may occur. Adverse events which have been associated with Ibuprofen are given below, listed by system organ class and frequency. Frequencies are defined as: very common ( $\geq 1/10$ ), common ( $\geq 1/100$  to  $< 1/10$ ), uncommon ( $\geq 1/1000$  to  $< 1/100$ ), rare ( $\geq 1/10,000$  to  $< 1/1000$ ), very rare ( $< 1/10,000$ ) and not known (cannot be estimated from the available data). Within each frequency grouping, adverse events are presented in order of decreasing seriousness.

The adverse events observed most often are gastrointestinal in nature. Adverse events are mostly dose-dependent, in particular the risk of occurrence of gastrointestinal bleeding is dependent on the dosage range and duration of treatment. Clinical studies suggest that use of ibuprofen, particularly at a high dose 2400mg/day) may be associated with a small increased risk of arterial thrombotic events (for example myocardial infarction or stroke) (see section 4.4).

#### Tabulated list of adverse reactions

The list of the following adverse events relates to those experienced with ibuprofen at OTC doses (maximum 1200 mg Ibuprofen per day), for short-term use. In the treatment of chronic conditions, under long-term treatment, additional adverse events may occur.

<b><i>System Organ Class</i></b>	<b><i>Frequency</i></b>	<b><i>Adverse events</i></b>
Blood and lymphatic system disorders	Very rare	Haematopoietic disorders <sup>1</sup>
Immune system disorders	Uncommon	Hypersensitivity reactions consisting of <sup>1</sup> : urticaria and pruritus <sup>2</sup> .
	Very rare	Severe hypersensitivity reactions. Symptoms could be: facial, tongue and larynx swelling, dyspnoea, tachycardia, hypotension, (anaphylaxis, angioedema or severe shock) <sup>2</sup> .
Nervous system disorders	Uncommon	Headache
	Very rare	Aseptic meningitis <sup>3</sup>
Ear and Labyrinth Disorders	Not Known	Hearing Impaired
Cardiac disorders	Very rare	Cardiac failure and oedema <sup>4</sup> , Kounis syndrome <sup>3</sup>
Vascular Disorders	Very rare	Hypertension <sup>4</sup>
Respiratory, Thoracic and Mediastinal Disorders	Not known	Respiratory tract reactivity comprising asthma, Bronchospasm or dyspnoea <sup>2</sup>
Gastrointestinal disorders	Uncommon	Abdominal pain, dyspepsia <sup>5</sup> and nausea.
	Rare	Diarrhoea, flatulence, constipation and vomiting

	Very rare	Peptic ulcer, gastrointestinal perforation or gastrointestinal haemorrhage, melaena, haematemesis <sup>6</sup> Mouth ulceration and gastritis.
	Not Known	Exacerbation of ulcerative colitis and Crohn's disease <sup>7</sup> (See section 4.4)
Hepatobiliary disorders	Very rare	Liver disorders
	Not Known	Hepatic function abnormal
Skin and subcutaneous tissue disorders	Uncommon	Skin rashes <sup>2</sup>
	Very rare	Severe cutaneous adverse reactions (SCARs) (including Erythema multiforme, exfoliative dermatitis, Stevens-Johnson syndrome, and toxic epidermal necrolysis).
	Not known	Rash maculo-papular, erythema. Drug reaction with eosinophilia and systemic symptoms (DRESS syndrome), Acute generalised exanthematous pustulosis (AGEP), Photosensitivity reactions
Renal and urinary disorders	Very rare	Acute renal failure <sup>8</sup> .
Infections and infestations	Very rare	Exacerbation of infections related inflammation (e.g. development of necrotizing fasciitis), in exceptional cases severe skin infections and soft-tissue complications may occur during a varicella infection.
Investigations	Very rare	Decreased haemoglobin levels, urea renal clearance decreased

#### Description of Selected Adverse Reactions

<sup>1</sup> Examples include anaemia, leucopenia, thrombocytopenia, pancytopenia, and agranulocytosis. First signs are: fever, sore throat, superficial mouth ulcers and flu-like symptoms, severe exhaustion, unexplained bleeding and bruising.

<sup>2</sup> Hypersensitivity reactions have been reported. These may consist of (a) non-specific allergic reactions and anaphylaxis, (b) respiratory tract activity, e.g. asthma, aggravated asthma, bronchospasm or dyspnea, or (c) various skin reactions, including rashes of various types, pruritus, urticaria, purpura, angioedema and more rarely, exfoliative and bullous dermatoses (including toxic epidermal necrolysis, Stevens-Johnson Syndrome and erythema multiforme).

<sup>3</sup> The pathogenic mechanism of drug-induced aseptic meningitis is not fully understood. However, the available data on NSAID-related aseptic meningitis points to a hypersensitivity reaction (due to a temporal relationship with drug intake, and disappearance of symptoms after drug discontinuation). Of note, single cases of symptoms of aseptic meningitis, (such as stiff neck, headache, nausea, vomiting, fever or disorientation) have been observed during treatment with ibuprofen in patients with existing auto-immune disorders (such as systemic lupus erythematosus, mixed connective tissue disease)

<sup>4</sup> Clinical studies suggest that the use of ibuprofen particularly at high doses (2400mg/day may be associated with a small increased risk of arterial thrombotic events (for example myocardial infarction or stroke) (see section 4.4).

<sup>5</sup> The adverse events observed most often are gastrointestinal in nature.

<sup>6</sup> Sometimes fatal, particularly in the elderly

<sup>7</sup> See Section 4.4

<sup>8</sup> Especially in long-term use, associated with increased serum urea and oedema. Also includes papillary necrosis.

#### **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 HPRA Pharmacovigilance. Website: [www.hpra.ie](http://www.hpra.ie)

#### **4.9 Overdose**

In adults the dose response effect is less clear cut than in children where ingestion of more than 400mg/kg may cause symptoms. The half-life in overdose is 1.5-3 hours.

#### **Symptoms**

Most patients who have ingested clinically important amounts of NSAIDs will develop no more than nausea, vomiting, epigastric pain, or more rarely diarrhoea. Tinnitus, headache, dizziness and gastrointestinal bleeding are also possible. In more serious poisoning, toxicity is seen in the central nervous system, manifesting as drowsiness, nystagmus, blurred vision, occasionally excitation and disorientation or coma. Occasionally patients develop convulsions. In serious poisoning metabolic acidosis may occur and the prothrombin time/ INR may be prolonged, probably due to interference with the actions of circulating clotting factors. Acute renal failure and loss of consciousness, hypotension and liver damage may occur. Exacerbation of asthma is possible in asthmatics.

A dose in excess of 200mg/kg carries a risk of causing toxicity.

### **Management**

No specific antidote is available. Management should be symptomatic and supportive and include the maintenance of a clear airway and monitoring of cardiac and vital signs until stable. Consider oral administration of activated charcoal if the patient presents within 1 hour of ingestion of a potentially toxic amount. If frequent or prolonged, convulsions should be treated with intravenous diazepam or lorazepam. Give bronchodilators for asthma.

## **5 PHARMACOLOGICAL PROPERTIES**

### **5.1 Pharmacodynamic properties**

Pharmacotherapeutic group: Propionic acid derivative ATCcode: M01A E01

#### Mechanism of action

Ibuprofen is a propionic acid derivative, having analgesic, anti-inflammatory and antipyretic activity. The drug's therapeutic effects as a non-steroidal anti-inflammatory are thought to result from inhibitory activity on prostaglandin synthetase. Furthermore, ibuprofen reversibly inhibits platelet aggregation.

Experimental data suggest that ibuprofen may competitively inhibit the effect of low dose aspirin (acetylsalicylic acid) on platelet aggregation when they are dosed concomitantly. Some pharmacodynamics studies show that when single doses of ibuprofen 400mg were taken within 8 h before or within 30 min after immediate release aspirin (acetylsalicylic acid) dosing (81 mg), a decreased effect of ASA (acetylsalicylic acid) on the formation of thromboxane or platelet aggregation occurred. Although there are uncertainties regarding extrapolation of these data to the clinical situation, the possibility that regular, long-term use of ibuprofen may reduce the cardioprotective effect of low-dose acetylsalicylic acid cannot be excluded. No relevant effect is considered to be likely for occasional ibuprofen use (see section 4.5).

#### **Product specific pharmacodynamics properties:**

Ibuprofen is dissolved in a hydrophilic solvent inside a gelatin shell. On ingestion, the gelatin shell disintegrates in the gastric juice releasing the solubilized ibuprofen for absorption.

### **5.2 Pharmacokinetic properties**

The ibuprofen from Ibuprofen 200 mg soft capsules is absorbed to the same extent as ibuprofen from Ibuprofen tablets, the AUC<sub>0-∞</sub> being equivalent. Ibuprofen is rapidly absorbed from Ibuprofen 200 mg soft capsules with maximum plasma concentration achieved in 30 minutes. In comparison, the maximum plasma concentration of Ibuprofen tablets is achieved in 90 minutes. When taken with food, plasma peak levels may be delayed.

Ibuprofen is rapidly absorbed following administration and is rapidly distributed throughout the whole body. Ibuprofen diffuses into the synovial fluid. The excretion is rapid and complete via the kidneys.

Peak plasma concentration of ibuprofen occurs 1-2 hours after administration of ibuprofen acid. When taken with food, peak plasma levels may be delayed. These times may vary with different dosage forms.

Elimination half-life is approximately 2 hours.

Following hepatic metabolism (hydroxylation, carboxylation, conjugation), the pharmacologically inactive metabolites are completely eliminated, mainly renally (90%), but also with the bile. The elimination half-life in healthy individuals and those with liver and kidney diseases is 1.8 to 3.5 hours. Plasma-protein binding is about 99%.

No significant differences in pharmacokinetic profile are observed in the elderly.

### **5.3 Preclinical safety data**

The subchronic and chronic toxicity of ibuprofen in animal trials showed up mainly in the form of lesions and ulcers in the gastrointestinal tract.

In vitro and in vivo studies gave no clinically relevant evidence of a mutagenic potential of ibuprofen. In studies in rats and mice no evidence of carcinogenic effects of ibuprofen was found.

Ibuprofen led to an inhibition of ovulation in rabbits and impaired implantation in various animal species (rabbit, rat, mouse). Experimental studies in rat and rabbit have shown that ibuprofen crosses the placenta. Following administration of maternotoxic doses, an increased incidence of malformations (ventricular septal defects) occurred in the progeny of rats.

## 6 PHARMACEUTICAL PARTICULARS

### 6.1 List of excipients

#### Capsule shell

Gelatin  
Polysorbate  
Purified water

#### Capsule fill

Macrogol 600  
Polysorbate 80  
Potassium hydroxide  
Purified water

### 6.2 Incompatibilities

Not applicable

### 6.3 Shelf life

2 years

### 6.4 Special precautions for storage

This medicinal product does not require any special storage conditions.

### 6.5 Nature and contents of container

Aluminium-PVC/PVDC blister packs containing 10, 12, 16, 18, 20, 24, 28, 30, 32, 36, 48, 96 capsules

Not all pack sizes may be marketed.

### 6.6 Special precautions for disposal and other handling

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

## 7 MARKETING AUTHORISATION HOLDER

Brillpharma (Ireland) Limited  
Inniscarra  
Main Street  
Rathcoole  
Dublin  
Ireland

## 8 MARKETING AUTHORISATION NUMBER

PA22749/022/004

## 9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 31<sup>st</sup> May 2019  
Date of last renewal: 5th December 2023



**10 DATE OF REVISION OF THE TEXT**

May 2024