Summary of Product Characteristics

1 NAME OF THE MEDICINAL PRODUCT

Osteoeze 625 mg film-coated tablets.

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each film-coated tablet contains 750mg glucosamine hydrochloride (equivalent to 625mg glucosamine).

Excipients: Each tablet also contains 1.1mg soya lecithin and 0.1mg sunset yellow FCF (E110).

For a full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Film-coated tablet.
The tablet is yellow, oblong and printed with A.

4 CLINICAL PARTICULARS

4.1 Therapeutic Indications

Relief of symptoms in mild to moderate osteoarthritis.

4.2 Posology and method of administration

Adults
One tablet twice daily.

Elderly
No dosage adjustment is required when treating elderly patients.

Impaired renal and/or liver function
As no studies have been carried out in patients with impaired renal and/or liver function no dose recommendations can be given.

Children
Osteoeze should not be given to children or adolescents under the age of 18 years.

4.3 Contraindications

Known hypersensitivity to glucosamine or any of the excipients.
Osteoeze must not be given to patients who are allergic to shellfish as the active ingredient is obtained from shellfish.

This product contains soya lecithin. Patients should not take this medicinal product if they are allergic (hypersensitive) to peanut or soya.

4.4 Special warnings and precautions for use

A doctor must be consulted to rule out the presence of joint diseases for which other treatment should be considered.

Caution is urged in the treatment of patients with diabetes mellitus. Closer monitoring of the blood glucose levels may be required at the start of treatment.

Osteoeze must not be given to children and adolescents under the age of 18 years as the efficacy and safety have not been proven.

Caution is recommended if glucosamine is combined with other medicinal products as there are no data available relating to interactions (see 4.5 Interactions with other medicinal products and other forms of interactions).

4.5 Interaction with other medicinal products and other forms of interaction

No interaction studies have been performed. It is not known whether glucosamine has any effects on the pharmacokinetics of other drugs.

Increased effect of coumarin anticoagulants (e.g. warfarin) during concomitant treatment with glucosamine has been reported in the post-marketing experience. Patients treated with coumarin anticoagulants should, therefore, be monitored closely when initiating or ending glucosamine therapy.

As possible interactions cannot be ruled out, care should be taken when combining glucosamine with other medicinal products.

4.6 Fertility, pregnancy and lactation

There are no adequate data from the use of glucosamine in pregnant women. No studies on animals have been carried out with respect to the effect on pregnancy, embryonal/foetal development and postnatal development. Osteoeze should therefore not be used during pregnancy and lactation.

4.7 Effects on ability to drive and use machines

No studies have been performed. Osteoeze is not expected to have any effects on the ability to drive and operate machinery.

4.8 Undesirable effects

The most frequently reported adverse reactions associated with glucosamine treatment are nausea, abdominal pain, indigestion, constipation and diarrhoea. In addition, headache, tiredness, rash, itching and flushing have been reported. The reported adverse reactions are usually mild and transitory.

The following adverse reactions have been reported in the post-marketing experience of glucosamine: angioedema, urticaria, oedema/peripheral oedema, asthma or asthma deteriorated, dizziness, stomach ache, diarrhoea, nausea/vomiting, and blood glucose control worsened in patients with diabetes mellitus.

MedDRA System Organ Class	Common (≥1/100 to < 1/10) -	Uncommon (≥1/1,000 to < 1/100)	Not known (cannot be estimated from the available data)
Nervous system disorders	Headache Tiredness	-	Dizziness
Respiratory, thoracic and mediastinal disorders	-	-	Asthma aggravated
Gastrointestinal disorders	Nausea Abdominal pain Indigestion Diarrhoea Constipation	-	Vomiting
Skin and subcutaneous tissue disorders	-	Rash Itching Flushing	Angioedema Urticaria
Metabolism and nutrition disorders	-	-	Diabetes mellitus inadequate control
General disorders and administration site conditions	-	-	Oedema Peripheral oedema

Cases of hypercholesterolaemia have been reported, but causality has not been established.

4.9 Overdose

Signs and symptoms of accidental or intentional overdose with glucosamine might include headache, dizziness, disorientation, arthralgia, nausea, vomiting, diarrhoea or constipation. In case of overdose, treatment with glucosamine should be discontinued and standard supportive measures should be adopted as required. These signs and symptoms of glucosamine overdose have been included as a result of review of published peer reviewed literature.

One case of overdose has been reported. A 12-year old female took 28 g of glucosamine hydrochloride. She developed arthralgia, vomiting and disorientation. The patient recovered without sequelae.

Patients should be advised to consult their doctor or nearest hospital in case of overdose.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Non-steroidal, anti-inflammatory and anti-rheumatic drugs.

ATC code: M01AX05

Glucosamine is an endogenous substance. The exogenous administration of glucosamine to animals can increase proteoglucan synthesis and thereby inhibit the breakdown of cartilage. Long-term studies indicate that glucosamine

can have a positive effect on the metabolism of cartilage. In published clinical studies, glucosamine has been shown to alleviate pain within 4 weeks, as well as improve mobility in the affected joints in patients with mild to moderate osteoarthritis.

5.2 Pharmacokinetic properties

Glucosamine is a relatively small molecule (molecular mass 179), which is easily dissolved in water and soluble in hydrophilic organic solvents.

The available information on the pharmacokinetics of glucosamine is limited. The absolute bioavailability is unknown. The distribution volume is approx. 5 litres and the half-life after intravenous administration is approx. 2 hours. Approx. 38% of an intravenous dose is excreted in the urine as unchanged substance.

5.3 Preclinical safety data

D-glucosamine has low acute toxicity.

Animal experimental data relating to general toxicity during chronic administration, reproduction toxicity, mutagenicity and carcinogenicity is lacking for glucosamine.

Results from *in vitro* studies and *in vivo* studies in animals have shown that glucosamine reduces insulin secretion and induces insulin resistance, probably via glucokinase inhibition in the beta cells. The clinical relevance is unknown.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Tablet core:
Povidone
Calcium phosphate
Microcrystalline cellulose
Crospovidone
Magnesium stearate

Tablet coating:
Polyvinyl alcohol
Talc
Soya lecithin
Macrogol 4000
Titanium dioxide (E171)
Sunset yellow FCF (E110)
Quinoline yellow aluminium lake (E104)
Yellow iron oxide (E172)

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

PVC/PVDC blisters: 3 years
HDPE Container: 2 years

6.4 Special precautions for storage

Do not store above 30^{o}C. Store in the original container.

6.5 Nature and contents of container

PVC/PVDC/Aluminium blister packs.
Package size: 60 and 180 tablets.

HDPE tablet container.
Package size: 90 tablets.

Not all pack sizes may be marketed

6.6 Special precautions for disposal of a used medicinal product or waste materials derived from such medicinal product and other handling of the product

No special requirements.

7 MARKETING AUTHORISATION HOLDER

Galen Limited
Seagoe Industrial Estate
Craigavon
BT63 5UA
United Kingdom

8 MARKETING AUTHORISATION NUMBER

PA 1329/5/1

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 26 August 2005

Date of last renewal: 26 August 2010

10 DATE OF REVISION OF THE TEXT

August 2010