MEFENAMIC ACID
PONSTAN®
500 mg Tablets, 50 mg/5 ml Suspension

MEFENAMIC ACID
PONSTAN SF®
500 mg Capsules
250 mg Capsules

Absolute contraindications:
Not to be given to those patients who have history of:
- Stroke: cerebrovascular accident, CVA
- Heart attack: Myocardial infarction, MI
- Coronary artery bypass graft, CABG
- Uncontrolled hypertension
- Congestive heart failure (CHF) NYHA II-IV

1.0 THERAPEUTIC CATEGORY

Analgesic/Antipyretic
Non Steroidal Anti-Inflammatory

2.0 DESCRIPTION

Mefenamic acid is N-(2,3-xylyl)-anthranilic acid. It is an orally active analgesic agent. The structure for mefenamic acid is:

\[
\begin{array}{c}
\text{COOH} \\
\text{CH}_3 \\
\text{CH}_3
\end{array}
\]

It is a white powder with a melting point of 230-231°C, molecular weight of 241.28, and water solubility of 0.004% at pH 7.1.

3.0 Formulation

Mefenamic acid (Ponstan) Suspension: Each 5 mL contains 50 mg of Mefenamic Acid
Mefenamic acid (Ponstan SF) 250 mg Capsule: Each capsule contains 250 mg of Mefenamic Acid
Mefenamic acid (Ponstan SF) 500 mg Capsule Each capsule contains 500 mg of Mefenamic Acid
Mefenamic acid (Ponstan) 500 mg Tablet: Each tablet contains 500 mg of Mefenamic Acid

4.0 CLINICAL PARTICULARS

4.1 Therapeutic Indications

Mefenamic acid (Ponstan) is indicated for:

1. The symptomatic relief of **rheumatoid arthritis** (including **Still's Disease**), **osteoarthritis** and pain including muscular, traumatic and dental pain, headaches of most etiology, post-operative and postpartum pain.

2. The symptomatic relief of **primary dysmenorrhea**.
3. **Menorrhagia** due to dysfunctional causes or the presence of an intrauterine device (IUD) when organic pelvic pathology has been excluded.

4. **Premenstrual syndrome.**

5. The relief of **pyrexia in pediatric patients over 6 months of age.**

### 4.2 Dosage and Method of Administration

Undesirable effects may be minimized by using the minimum effective dose for the shortest duration necessary to control symptoms.

The oral dosage form of mefenamic acid (Ponstan) may be taken with food if gastrointestinal upset occurs.

**Mild to moderate pain/rheumatoid arthritis/osteoarthritis** in adults and adolescents over 14 years of age: 500 mg three times daily.

**Dysmenorrhea:** 500 mg three times daily, to be administered at the onset of menstrual pain and continued while symptoms persist according to the judgment of the physician.

**Menorrhagia:** 500 mg three times daily, starting with the onset of bleeding and associated symptoms and continued according to the judgment of the physician.

**Premenstrual syndrome:** 500 mg three times daily, starting with the onset of symptoms and continued until the anticipated cessation of symptoms according to the judgment of the physician.

**For Still’s Disease or antipyretic action in infants and children over 6 months to 14 years:** 19.5 mg/kg to 25 mg/kg of body weight daily in divided doses three times daily.

**Pediatric Use**

Mefenamic acid is reported to be effective for pyrexia in pediatric patients over 6 months of age, and for pain in adolescents over 14 years of age.

**Use in the Elderly**

Impairment of renal function, sometimes leading to acute renal failure, has been reported. Elderly or debilitated patients seem unable to tolerate ulceration or bleeding as well as some other individuals; most spontaneous reports of fatal gastrointestinal events are in this patient population. (See section **4.4 Special Warnings and Special Precautions for Use — Gastrointestinal Effects**)

### 4.3 Contraindications

Mefenamic acid (Ponstan) should not be used in patients with known hypersensitivity to mefenamic acid or any of the components of this product.

Because the potential exists for cross-sensitivity to aspirin or other nonsteroidal anti-inflammatory drugs, mefenamic acid (Ponstan) should not be given to patients in whom these drugs induce symptoms of bronchospasm, allergic rhinitis, or urticaria.

Mefenamic acid (Ponstan) is contraindicated in patients with active ulceration or chronic inflammation of either the upper or lower gastrointestinal tract and should be avoided in patients with pre-existing renal disease.
Treatment of peri-operative pain in the setting of coronary artery bypass graft (CABG) surgery.

Patients with severe renal and hepatic failure.

Patients with severe heart failure.

4.4 **Special Warnings and Special Precautions for Use**

The use of mefenamic acid (Ponstan) with concomitant NSAIDs including COX-2 inhibitors should be avoided.

**Cardiovascular Effects**

NSAIDs may cause an increased risk of serious cardiovascular thrombotic events, myocardial infarction, and stroke which can be fatal. This risk may increase with duration of use. Patients with known cardiovascular disease may be at greater risk. To minimize the potential risk for an adverse cardiovascular event in patients treated with mefenamic acid (Ponstan), the lowest effective dose should be used for the shortest duration possible. Physicians and patients should remain alert for the development of such events, even in the absence of previous cardiovascular symptoms. Patients should be informed about the signs and/or symptoms of serious cardiovascular toxicity and the steps to take if they occur (see section 4.3 Contraindications).

**Hypertension**

As with all NSAIDS, mefenamic acid (Ponstan) can lead to the onset of new hypertension or worsening of pre-existing hypertension, either of which may contribute to the increased incidence of cardiovascular events. NSAIDs, including mefenamic acid (Ponstan), should be used with caution in patients with hypertension. Blood pressure should be monitored closely during the initiation of therapy with mefenamic acid (Ponstan) and throughout the course of therapy.

**Fluid Retention and Edema**

As with other drugs known to inhibit prostaglandin synthesis, fluid retention and edema have been observed in some patients taking NSAIDs, including mefenamic acid (Ponstan). Therefore, mefenamic acid (Ponstan) should be used with caution in patients with compromised cardiac function and other conditions predisposing to, or worsened by, fluid retention. Patients with pre-existing congestive heart failure or hypertension should be closely monitored.

**Gastrointestinal (GI) Effects**

If diarrhea occurs, the dosage should be reduced or temporarily suspended. Symptoms may recur in certain patients following subsequent exposure.

NSAIDs including mefenamic acid (Ponstan), can cause serious gastrointestinal (GI) adverse events including inflammation, bleeding, ulceration, and perforation of the stomach, small intestine, or large intestine, which can be fatal. When GI bleeding or ulceration occurs in patients receiving mefenamic acid (Ponstan), the treatment should be withdrawn. Patients most at risk of developing these types of GI complications with NSAIDs are the elderly, patients with cardiovascular disease, patients using concomitant aspirin, or patients with a prior history of, or active gastrointestinal disease, such as ulceration, GI bleeding or inflammatory conditions. Therefore, mefenamic acid (Ponstan) should be used with caution in these patients (See section 4.3 Contraindications).

**Skin Reactions**

Serious skin reactions, some of them fatal including exfoliative dermatitis, Stevens Johnson syndrome, and toxic epidermal necrolysis, have been reported very rarely in association with the use of NSAIDs including mefenamic acid (Ponstan). Patients appear to be at highest risk for these events early in the course of therapy, the onset of the event occurring in the majority of cases
within the first month of treatment. Mefenamic acid (Ponstan) should be discontinued at the first appearance of skin rash, mucosal lesions, or any other sign of hypersensitivity.

**Laboratory Tests**
A false-positive reaction for urinary bile, using the diazo tablet test, may result following mefenamic acid (Ponstan) administration. If biliruria is suspected, other diagnostic procedures, such as the Harrison spot test, should be performed.

**Renal Effects**
In rare cases, NSAIDs, including mefenamic acid (Ponstan), may cause interstitial nephritis, glomerulitis, papillary necrosis and the nephrotic syndrome. NSAIDs inhibit the synthesis of renal prostaglandin which plays a supportive role in the maintenance of renal perfusion in patients whose renal blood flow and blood volume are decreased. In these patients, administration of an NSAID may precipitate overt renal decompensation, which is typically followed by recovery to pretreatment state upon discontinuation of NSAID therapy. Patients at greatest risk of such a reaction are those with congestive heart failure, liver cirrhosis, nephrotic syndrome, overt renal disease and the elderly. Such patients should be carefully monitored while receiving NSAID therapy.

Discontinuation of nonsteroidal anti-inflammatory drug (NSAID) therapy is typically followed by recovery to the pre-treatment state. Since mefenamic acid metabolites are eliminated primarily by the kidneys, the drug should not be administered to patients with significantly impaired renal function.

**Hematologic Effects**
Mefenamic acid (Ponstan) can inhibit platelet aggregation and may prolong prothrombin time in patients on warfarin therapy. (See section 4.5 Interactions with Other Medicinal Products and Other Forms of Interaction)

**Hepatic Effects**
Borderline elevations of one or more liver function tests may occur in some patients receiving mefenamic acid (Ponstan) therapy. These elevations may progress, may remain essentially unchanged, or may be transient with continued therapy. A patient with symptoms and/or signs suggesting liver dysfunction, or in whom an abnormal liver test has occurred, should be evaluated for evidence of the development of more severe hepatic reaction while on therapy with mefenamic acid (Ponstan). If abnormal liver tests persist or worsen, if clinical signs and symptoms consistent with liver disease develop, or if systemic manifestations occur, mefenamic acid (Ponstan) should be discontinued.

4.5 Interaction with Other Medicinal Products and Other Forms of Interaction

**Anticoagulants:** Mefenamic acid has been shown to displace warfarin from protein binding sites, and may enhance the response to oral anticoagulants. Therefore, concurrent administration of mefenamic acid with oral anticoagulant drugs requires frequent prothrombin time monitoring.

**Anti-hypertensives including diuretics, angiotensin-converting enzyme (ACE) inhibitors and angiotensin II antagonists (AIIA):** NSAIDs can reduce the efficacy of diuretics and other antihypertensive drugs.

In patients with impaired renal function (e.g. dehydrated patients or elderly patients with compromised renal function), the co-administration of an ACE inhibitor or an AIIA with a cyclooxygenase inhibitor can increase the deterioration of the renal function, including the possibility of
acute renal failure, which is usually reversible. The occurrence of these interactions should be considered in patients taking mefenamic acid (Ponstan) with an ACE inhibitor or an AIIA.

Therefore, the concomitant administration of these drugs should be done with caution, especially in elderly patients. Patients should be adequately hydrated and the need to monitor the renal function should be assessed in the beginning of the concomitant treatment and periodically thereafter.

**Corticosteroids:** Increased risk of gastrointestinal ulceration or bleeding

**Cyclosporine:** Because of their effect on renal prostaglandins, cyclooxygenase inhibitors such as diclofenac can increase the risk of nephrotoxicity with cyclosporine.

**Hypoglycemic agents:** There have been reports of changes in the effects of oral hypoglycemic agents in the presence of NSAIDs. Therefore, mefenamic acid (Ponstan) should be administered with caution in patients receiving insulin or oral hypoglycemic agents.

**Lithium:** Mefenamic acid has produced an elevation of plasma lithium levels and a reduction in renal lithium clearance. Thus, when mefenamic acid and lithium are administered concurrently, patients should be observed carefully for signs of lithium toxicity.

**Methotrexate:** Caution is advised when methotrexate is administered concurrently with NSAIDs, including mefenamic acid (Ponstan), because NSAID administration may result in increased plasma levels of methotrexate.

**Tacrolimus:** Possible increased risk of nephrotoxicity when NSAIDs are given with tacrolimus.

## 4.6 Fertility, Pregnancy and Lactation

**Fertility**
Based on the mechanism of action, the use of NSAIDs may delay or prevent rupture of ovarian follicles, which has been associated with reversible infertility in some women. In women who have difficulties conceiving or who are undergoing investigation of infertility, withdrawal of NSAIDs, including mefenamic acid (Ponstan) should be considered.

**Pregnancy**
(See section 5.3 Preclinical Safety)
Since there are no adequate and well-controlled studies in pregnant women, this drug should be used only if the potential benefits to the mother justify the possible risk to the fetus. It is not known if mefenamic acid or its metabolites cross the placenta. However, because of the effects of drugs in this class (i.e., inhibitors of prostaglandin synthesis) on the fetal cardiovascular system (e.g., premature closure of the ductus arteriosus), the use of mefenamic acid in pregnant women is not recommended. Mefenamic acid inhibits prostaglandin synthesis which may result in prolongation of pregnancy and interference with labor when administered late in the pregnancy. Women on mefenamic acid therapy should consult their physician if they decide to become pregnant.

Inhibition of prostaglandin synthesis might adversely affect pregnancy. Data from epidemiological studies suggest an increased risk of spontaneous abortion after use of prostaglandin synthesis inhibitors in early pregnancy. In animals, administration of prostaglandin synthesis inhibitors has been shown to result in increased pre- and post-implantation loss.

**Lactation**
Trace amounts of mefenamic acid may be present in breast milk and transmitted to the nursing infant. Therefore, mefenamic acid (Ponstan) should not be taken by nursing mothers.
4.7 Effects on Ability to Drive and Use Machines

The effect of mefenamic acid (Ponstan) on the ability to drive or use machinery has not been systematically evaluated.

4.8 Undesirable Effects

**Blood and lymphatic system disorders:** agranulocytosis, aplastic anemia, autoimmune hemolytic anemia*, bone marrow hypoplasia, decreased hematocrit, eosinophilia, leukopenia, pancytopenia and thrombocytopenic purpura, platelet aggregation inhibition

**Immune system disorders:** anaphylaxis

**Metabolism and nutrition disorders:** glucose intolerance in diabetic patients, hyponatremia, fluid retention

**Psychiatric disorders:** nervousness

**Nervous system disorders:** aseptic meningitis, blurred vision, convulsions, dizziness, drowsiness, headache, and insomnia.

**Eye disorders:** eye irritation, reversible loss of color vision

**Ear and labyrinth disorders:** ear pain

**Cardiac disorders:** palpitation

**Vascular disorders:** hypotension, hypertension

**Respiratory, thoracic and mediastinal disorders:** asthma, dyspnea

**Gastrointestinal disorders:** Gastrointestinal inflammation, gastrointestinal hemorrhage, gastrointestinal ulcer, gastrointestinal perforation

The most frequently reported side effects associated with mefenamic acid involve the gastrointestinal tract. Diarrhea appears to be the most common side effect and is usually dose-related. It generally subsides on dosage reduction, and rapidly disappears on termination of therapy. Some patients may not be able to continue therapy.

The following are the most common gastrointestinal side effects: abdominal pain, diarrhea and nausea with or without vomiting.

Less frequently reported gastrointestinal / hepatobiliary side effects include: anorexia, cholestatic jaundice, colitis, constipation, enterocolitis, flatulence, gastric ulceration with and without hemorrhage, mild hepatic toxicity, hepatitis, hepatorenal syndrome, pyrosis, pancreatitis and steatorrhea.

**Skin and subcutaneous tissue disorders:** angioedema, edema of the larynx, erythema multiforme, facial edema, Lyell’s syndrome (toxic epidermal necrolysis), perspiration, pruritus, rash, Stevens-Johnson syndrome, urticaria and dermatitis exfoliative
Renal and urinary disorders: dysuria, hematuria, renal failure including papillary necrosis, and tubulointerstitial nephritis, glomerulonephritis, nephrotic syndrome.

General disorders and administration site conditions: Edema

Investigations: Urobilinogen urine (false-positive), liver function test abnormal

**Pediatric patients**
General disorders and administration site conditions: hypothermia.

*Reports are associated with ≥12 months of mefenamic acid therapy and the anemia is reversible with discontinuation of therapy.

4.9 **Overdose**

Following accidental overdosage, the stomach should be emptied immediately by inducing emesis or by gastric lavage, followed by administration of activated charcoal. Vital functions should be monitored and supported. Hemodialysis is of little value since mefenamic acid and its metabolites are firmly bound to plasma proteins.

Seizures, acute renal failure, coma, confusional state, vertigo, and hallucination have been reported with mefenamic acid overdoses. Overdose has led to fatalities.

5.0 **PHARMACOLOGICAL PROPERTIES**

5.1 **Pharmacodynamic Properties**

**Mechanism of Action**
Mefenamic acid is a nonsteroidal agent with demonstrated anti-inflammatory, analgesic, and antipyretic activity in laboratory animals. Mefenamic acid was found to inhibit prostaglandin synthesis and to compete for binding at the prostaglandin receptor sites in animal models.

5.2 **Pharmacokinetic Properties**

**Absorption**
Mefenamic acid is rapidly absorbed from the gastrointestinal tract. Following administration of a one gram oral dose to adults, peak plasma levels of 10 μg/mL occur in 1 to 4 hours, with a half-life of 2 hours. Plasma levels are proportional to dose, following multiple doses, with no drug accumulation. One gram of mefenamic acid administered four times daily produces peak blood levels of 20 μg/mL by the second day of administration.

**Distribution**
Mefenamic acid is extensively bound to plasma proteins.

**Metabolism**
Mefenamic acid metabolism is predominantly mediated via cytochrome P450 CYP 2C9 in the liver. Patients who are known or suspected to be poor CYP2C9 metabolizers based on previous history/experience with other CYP2C9 substrates should be administered mefenamic acid with caution as they may have abnormally high plasma levels due to reduced metabolic clearance.

**Elimination**
Following a single oral dose, 52-67% of the dose was recovered from the urine as unchanged drug or one of two metabolites. Assay of stools over 3 days accounted for 20-25% of the dose, chiefly as unconjugated metabolite II.

5.3 Preclinical Safety Data

Rats given up to 10 times the human dose showed decreased fertility, delay in parturition, and a decreased rate of survival to weaning. No fetal abnormalities were observed in this study and in another study in dogs receiving 10 times the human dose.

6.0 PHARMACEUTICAL PARTICULARS

6.1 Shelf Life

Please see outer package for the expiry date.

6.2 Special Precautions for Storage

Store at temperature not exceeding 30 °C.

Foods, Drugs and Cosmetics Act prohibits dispensing without a prescription

6.3 HOW SUPPLIED

Mefenamic acid (Ponstan SF) 250 mg capsule: Scarlet opaque cap imprinted in black with “SF” and scarlet, opaque body imprinted in black with “Ponstan SF 250mg”. Available in blisters of 10’s, in boxes of 200’s.

Mefenamic acid (Ponstan SF) 500 mg capsule: Red opaque body, yellow opaque cap imprinted with “Parke Davis” and “Ponstan SF 500 mg” in black. Available in blisters of 10’s, in boxes of 100’s.

Mefenamic acid (Ponstan) 500 mg tablet: Elliptical, smooth yellow film coated tablet. Available in blisters of 10’s, in boxes of 200’s.

Mefenamic acid (Ponstan) 50 mg/5mL suspension: A creamy, opaque, off-white liquid with a pleasant odor. Available in 60 mL bottles.

Ponstan SF 250 mg capsule
Ponstan SF 500 mg capsule
Ponstan 50 mg/5mL suspension

Manufactured by:
Interphil Laboratories Inc
Canlubang Industrial Estate
Bo. Pittland, Cabuyao, Laguna

Ponstan 500 mg tablet

Manufactured by:
PT Pfizer Indonesia
JI Raya Bogor Km. 28
Jakarta 13710, Indonesia