

## **AUSTRALIAN PRODUCT INFORMATION – MERSYNDOL (PARACETAMOL, CODEINE PHOSPHATE HEMIHYDRATE, AND DOXYLAMINE SUCCINATE)**

### **WARNINGS**

#### **Limitations of use**

**Because of the risks associated with the use of opioids, Mersyndol should only be used in patients for whom other treatment options, including non-opioid analgesics, are ineffective, not tolerated or otherwise inadequate to provide appropriate management of pain (see section 4.4 Special Warnings and Precautions for Use).**

#### **Hazardous and harmful use**

**Mersyndol poses risks of hazardous and harmful use which can lead to overdose and death. Assess the patient's risk of hazardous and harmful use before prescribing and monitor the patient regularly during treatment (see section 4.4. Special Warnings and Precautions for Use).**

#### **Life threatening respiratory depression**

**Serious, life-threatening or fatal respiratory depression may occur with the use of Mersyndol. Be aware of situations which increase the risk of respiratory depression, modify dosing in patients at risk and monitor patients closely, especially on initiation or following a dose increase (see section 4.4 Special Warnings and Precautions for Use).**

#### **Concomitant use of benzodiazepines and other central nervous system (CNS) depressants, including alcohol**

**Concomitant use of opioids with benzodiazepines, gabapentinoids, antihistamines, tricyclic antidepressants, antipsychotics, cannabis or other central nervous system (CNS) depressants, including alcohol, may result in profound sedation, respiratory depression, coma, and death. Limit dosages and durations to the minimum required; and monitor patients for signs and symptoms of respiratory depression and sedation. Caution patients not to drink alcohol while taking Mersyndol.**

## **1 NAME OF THE MEDICINE**

Paracetamol, codeine phosphate hemihydrate and doxylamine succinate.

## **2 QUALITATIVE AND QUANTITATIVE COMPOSITION**

Mersyndol contains paracetamol 450 mg, codeine phosphate hemihydrate 9.75 mg, doxylamine succinate 5 mg.

Mersyndol is aspirin-free.

For the full list of excipients, see Section [6.1 LIST OF EXCIPIENTS](#).

## **3 PHARMACEUTICAL FORM**

Mersyndol is available as tablets or caplets.

The tablets are yellow, marked with 'M' inside two concentric circles on one side and 'Mersyndol 008' and a breakline on the reverse.

The caplets are yellow, capsule-shaped tablets with 'Mersyndol' on one side and a breakline on the other.

## **4 CLINICAL PARTICULARS**

### **4.1 THERAPEUTIC INDICATIONS**

For the relief of acute moderate pain and fever.

### **4.2 DOSE AND METHOD OF ADMINISTRATION**

#### **Adults and children 12 years of age and older**

One or two tablets every 4 to 6 hours as needed for relief. Do not exceed 8 tablets in 24-hour period. Not recommended to be used for long periods.

Use in children under 12 years is contraindicated.

### **4.3 CONTRAINDICATIONS**

Known hypersensitivity to paracetamol, codeine or doxylamine succinate or to any of the excipients listed under section [6.1 LIST OF EXCIPIENTS](#); patients with severe respiratory

disease, acute respiratory disease and respiratory depression/insufficiency, for example acute asthma, acute exacerbations of chronic obstructive pulmonary disease since codeine may exacerbate the condition. Patients with severe hepatocellular insufficiency. Patients with glucose-6-phosphate-dehydrogenase deficiency.

Mersyndol is contraindicated for use in patients who are:

- CYP2D6 ultra-rapid metabolisers (see Section 4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE – CYP2D6 metabolism).
- younger than 12 years (see Section 4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE – Paediatric use).
- aged between 12 – 18 years in whom respiratory function might be compromised, including post tonsillectomy and/or adenoidectomy for obstructive sleep apnoea, obesity and pulmonary disease due to an increased risk of developing serious and life-threatening adverse reactions (see Section 4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE – Paediatric use).
- breastfeeding (see Section 4.6 FERTILITY, PREGNANCY AND LACTATION – Use in lactation).
- Using Monoamine inhibitors (MAOIs) or have stopped treatment within the last 14 days. (see Section 4.5 INTERACTIONS WITH OTHER MEDICINES AND OTHER FORMS OF INTERACTIONS).

Codeine is contraindicated in the event of impending childbirth or in case of risk of premature birth.

#### **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**

Hepatotoxicity may occur with paracetamol even at therapeutic doses, after short treatment duration and in patients without pre-existing liver dysfunction.

##### **To avoid the risk of overdose:**

Check that paracetamol is absent from the composition of other medicinal products taken concomitantly.

Avoid alcohol.

This medication may be dangerous when used in large amounts or for long periods. Hepatotoxicity may develop following a dose of 10 g of paracetamol and hepatic failure is known to occur occasionally with the long term use of paracetamol.

Patients with known analgesic intolerance or known bronchial asthma must only use Mersyndol after having consulted a physician (hypersensitivity reactions including bronchospasm are possible).

Caution is advised in patients with underlying sensitivity to aspirin and/or to non-steroidal anti-inflammatory drugs (NSAIDs)

Severe cutaneous adverse reactions (SCARs): Life-threatening cutaneous reactions Stevens-Johnson syndrome (SJS), and Toxic Epidermal Necrolysis (TEN) have been reported with the use of paracetamol. If symptoms or signs of SJS and TEN (e.g. progressive skin rash often with blisters or mucosal lesions) occur, patients should stop immediately paracetamol treatment and seek medical advice.

**Paracetamol should be used upon medical advice in patients with:**

- mild to moderate hepatocellular insufficiency
- severe renal insufficiency
- chronic alcohol use including recent cessation of alcohol intake
- low glutathione reserves
- Gilbert's syndrome

Codeine must be administered with caution in certain patients such as those who present with impaired cardiac, hepatic or renal function, hypotension, benign prostatic hyperplasia, urethral stenosis, adrenal insufficiency (Addison's disease), hypothyroidism, multiple sclerosis, chronic colitis ulcerative, gallbladder conditions and diseases that present with reduced respiratory capacity such as emphysema, kyphoscoliosis and severe obesity.

Patients who have had a cholecystectomy should be treated with caution. The contraction of the sphincter of Oddi can cause symptoms resembling those of myocardial infarction or intensify the symptoms in patients with pancreatitis.

Codeine should be used with caution in patients with convulsive disorders.

Extensive use of analgesics to relieve headaches or migraines, especially at high doses, may induce headaches that must not be treated with increased doses of the drug. In such cases the analgesic should not continue to be taken without medical advice.

Monitoring after prolonged use should include blood count, liver function and renal function.

Codeine should only be used after careful risk-benefit assessment in case of:

- Opioid dependence
- Chronic constipation
- Conditions with elevated intracranial pressure and head trauma. Codeine can increase the pressure of cerebrospinal fluid and may increase the respiratory depressant effect. Like other narcotics, it causes adverse reactions that can obscure the clinical course of patients with head injury.
- Impaired consciousness

- Compromised respiratory function (due to emphysema, kyphoscoliosis, severe obesity) and chronic obstructive airway disease

Doxylamine must be administered with caution in patients with:

- urinary retention
- susceptibility to angle closure glaucoma

### **CYP2D6 metabolism**

Mersyndol is contraindicated for use in patients who are CYP2D6 ultra-rapid metabolisers.

Codeine is metabolised by the liver enzyme CYP2D6 into morphine, its active metabolite. If a patient has a deficiency or is completely lacking this enzyme an adequate analgesic effect will not be obtained.

However, if the patient is an extensive or ultra-rapid metaboliser, there is an increased risk of developing side effects of opioid toxicity even at commonly prescribed doses. These patients convert codeine into morphine rapidly resulting in higher than expected serum morphine levels. General symptoms of opioid toxicity include confusion, somnolence, shallow breathing, small pupils, nausea, vomiting, constipation, and lack of appetite. In severe cases this may include symptoms of circulatory and respiratory depression, which may be life-threatening and very rarely fatal. Children are particularly susceptible due to their immature airway anatomy. Deaths have been reported in children with rapid metabolism who were given codeine for analgesia post adenotonsillectomy. Morphine can also be ingested by infants through breast milk, causing risk of respiratory depression to infants of rapid metabolizer mothers who take codeine. The prevalence of codeine ultra-rapid metabolism by CYP2D6 in children is not known, but is assumed to be similar to that reported in adults. The prevalence of ultra-rapid metabolisers differs according to racial and ethnic group.

It is estimated to be 1% in those of Chinese, Japanese and Hispanic descent, 3% in African Americans and 1%-10% in Caucasians. The highest prevalence (16%-28%) occurs in North African, Ethiopian and Arab populations. (See also Section 4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE – Paediatric use and Section 4.6 FERTILITY, PREGNANCY AND LACTATION – Use in lactation.)

### **Hazardous and harmful use**

Mersyndol contains the opioid codeine and is a potential drug of abuse, misuse and addiction. Addiction can occur in patients appropriately prescribed Mersyndol at recommended doses.

The risk of addiction is increased in patients with a personal or family history of substance abuse (including alcohol and prescription and illicit drugs) or mental illness. The risk also increases the longer the drug is used and with higher doses. Patients should be assessed for their risks for opioid abuse or addiction prior to being prescribed Mersyndol.

There have been reports of drug abuse with codeine, including cases in children and adolescents. Caution is particularly recommended for use in children, adolescents, young adults and in patients with a history of drug and/or alcohol abuse. See Section 4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE – Paediatric use.

All patients receiving opioids should be routinely monitored for signs of misuse and abuse. Opioids are sought by people with addiction and may be subject to diversion. Strategies to reduce these risks include prescribing the drug in the smallest appropriate quantity and advising the patient on the safe storage and proper disposal of any unused drug (see section 6.4 Special precautions for storage and section 6.6 Special precautions for disposal). Caution patients that abuse of oral or transdermal forms of opioids by parenteral administration can result in serious adverse events, which may be fatal.

Patients should be advised not to share Mersyndol with anyone else.

### **Respiratory depression**

Serious, life-threatening or fatal respiratory depression can occur with the use of opioids even when used as recommended. It can occur at any time during the use of Mersyndol but the risk is greatest during initiation of therapy or following an increase in dose. Patients should be monitored closely for respiratory depression at these times.

The risk of life-threatening respiratory depression is also higher in elderly, frail, or debilitated patients and in patients with hepatic and renal impairment (see Use in hepatic impairment and Use in renal impairment) and in patients with existing impairment of respiratory function (e.g. chronic obstructive pulmonary disease; asthma). Opioids should be used with caution and with close monitoring in these patients. The use of opioids is contraindicated in patients with severe respiratory disease, acute respiratory disease and respiratory depression (see section 4.3 Contraindications).

The risk of respiratory depression is greater with the use of high doses of opioids, especially high potency and modified release formulations, and in opioid naïve patients. Initiation of opioid treatment should be at the lower end of the dosage recommendations with careful titration of doses to achieve effective pain relief. Careful calculation of equianalgesic doses is required when changing opioids or switching from immediate release to modified release formulations, together with consideration of pharmacological differences between opioids. Consider starting the new opioid at a reduced dose to account for individual variation in response.

### **Risks from concomitant use of benzodiazepines or other CNS depressants, including alcohol**

Concomitant use of opioids and benzodiazepines or other CNS depressants, including alcohol, may result in sedation, respiratory depression, coma and death. Because of these risks, concomitant prescribing of Mersyndol with CNS depressant medicines, such as other opioid analgesics, benzodiazepines, gabapentinoids, cannabis, sedatives, hypnotics, tricyclic antidepressants, antipsychotics, antihistamines, centrally-active anti-emetics and other CNS depressants, should be reserved for patients for whom other treatment options are not possible. If a decision is made to prescribe Mersyndol concomitantly with any of the medicines, the lowest

effective dose should be used, and the duration of treatment should be as short as possible. Patients should be followed closely for signs and symptoms of respiratory depression and sedation. Patients and their caregivers should be made aware of these symptoms. Patients and their caregivers should also be informed of the potential harms of consuming alcohol while taking Mersyndol.

### **Use of opioids in chronic (long-term) non-cancer pain (CNCP)**

Opioid analgesics have an established role in the treatment of acute pain, cancer pain and palliative and end-of-life care. Current evidence does not generally support opioid analgesics in improving pain and function for most patients with chronic non-cancer pain. The development of tolerance and physical dependence and risks of adverse effects, including hazardous and harmful use, increase with the length of time a patient takes an opioid. The use of opioids for long-term treatment of CNCP is not recommended.

The use of an opioid to treat CNCP should only be considered after maximised non-pharmacological and non-opioid treatments have been tried and found ineffective, not tolerated or otherwise inadequate to provide sufficient management of pain. Opioids should only be prescribed as a component of comprehensive multidisciplinary and multimodal pain management.

Opioid therapy for CNCP should be initiated as a trial in accordance with clinical guidelines and after a comprehensive biopsychosocial assessment has established a cause for the pain and the appropriateness of opioid therapy for the patient (see Hazardous and harmful use, above). The expected outcome of therapy (pain reduction rather than complete abolition of pain, improved function and quality of life) should be discussed with the patient before commencing opioid treatment, with agreement to discontinue treatment if these objectives are not met.

Owing to the varied response to opioids between individuals, it is recommended that all patients be started at the lowest appropriate dose and titrated to achieve an adequate level of analgesia and functional improvement with minimum adverse reactions. Immediate-release products should not be used to treat chronic pain, but may be used for a short period in opioid-naïve patients to develop a level of tolerance before switching to a modified-release formulation. Careful and regular assessment and monitoring is required to establish the clinical need for ongoing treatment. Discontinue opioid therapy if there is no improvement of pain and/or function during the trial period or if there is any evidence of misuse or abuse. Treatment should only continue if the trial has demonstrated that the pain is opioid responsive and there has been functional improvement. The patient's condition should be reviewed regularly and the dose tapered off slowly if opioid treatment is no longer appropriate (see Ceasing Opioids).

### **Tolerance, dependence and withdrawal**

Neuroadaptation of the opioid receptors to repeated administration of opioids can produce tolerance and physical dependence. Tolerance is the need for increasing doses to maintain analgesia. Tolerance may occur to both the desired and undesired effects of the opioid.

Physical dependence, which can occur after several days to weeks of continued opioid usage, results in withdrawal symptoms if the opioid is ceased abruptly or the dose is significantly reduced. Withdrawal symptoms can also occur following the administration of an opioid antagonist (e.g. naloxone) or partial agonist (e.g. buprenorphine). Withdrawal can result in some or all of the following symptoms: dysphoria, restlessness/agitation, lacrimation, rhinorrhoea, yawning, sweating, chills, myalgia, mydriasis, irritability, anxiety, increasing pain, backache, joint pain, weakness, abdominal cramps, insomnia, nausea, anorexia, vomiting, diarrhoea, increased blood pressure, increased respiratory rate and increased heart rate.

When discontinuing Mersyndol in a person who may be physically-dependent, the drug should not be ceased abruptly but withdrawn by tapering the dose gradually (see Ceasing opioids).

### **Accidental ingestion/exposure**

Accidental ingestion or exposure of Mersyndol, especially by children, can result in a fatal overdose of codeine. Patients and their caregivers should be given information on safe storage and disposal of unused Mersyndol (see section 6.4 Special precautions for storage and section 6.6 Special precautions for disposal).

### **Hyperalgesia**

Hyperalgesia may occur with the use of opioids, particularly at high doses. Hyperalgesia may manifest as an unexplained increase in pain, increased levels of pain with increasing opioid dosages or diffuse sensitivity not associated with the original pain. Hyperalgesia should not be confused with tolerance (see Tolerance, dependence and withdrawal). If opioid induced hyperalgesia is suspected, the dose should be reduced and tapered off if possible. A change to a different opioid may be required.

### **Ceasing opioids**

Abrupt discontinuation or rapid decreasing of the dose in a person physically dependent on an opioid may result in serious withdrawal symptoms and uncontrolled pain (see Tolerance, dependence and withdrawal). Such symptoms may lead the patient to seek other sources of licit or illicit opioids. Opioids should not be ceased abruptly in a patient who is physically dependent but withdrawn by tapering the dose slowly. Factors to take into account when deciding how to discontinue or decrease therapy include the dose and duration of the opioid the patient has been taking, the type of pain being treated and the physical and psychological attributes of the patient. A multimodal approach to pain management should be in place before initiating an opioid analgesic taper. During tapering, patients require regular review and support to manage any increase in pain, psychological distress and withdrawal symptoms.

There are no standard tapering schedules suitable for all patients and an individualised plan is necessary. In general, tapering should involve a dose reduction of no more than 10 percent to 25 percent every 2 to 4 weeks. If the patient is experiencing increased pain or serious withdrawal symptoms, it may be necessary to go back to the previous dose until stable before proceeding with a more gradual taper.



When ceasing opioids in a patient who has a suspected opioid use disorder, the need for medication assisted treatment and/or referral to a specialist should be considered.

### **Use in hepatic impairment**

Mersyndol should be used with caution in severe hepatic dysfunction.

### **Use in renal impairment**

Mersyndol should be used with caution in renal dysfunction.

### **Use in the elderly**

Elderly people may be more sensitive to the effects of this medicinal product, especially respiratory depression. The elderly are more likely to have hypertrophy, prostatic obstruction and age-related renal impairment and may be more susceptible to the undesirable effects due to opioid-induced urinary retention and the respiratory effects of opioid analgesics.

### **Paediatric use**

Mersyndol is contraindicated for use in children:

- younger than 12 years.
- aged between 12–18 years in whom respiratory function might be compromised including post tonsillectomy and/or adenoidectomy for obstructive sleep apnoea. Respiratory depression and death have occurred in some children who received codeine following tonsillectomy and/or adenoidectomy and had evidence of being ultra-rapid metabolisers of codeine due to a CYP2D6 polymorphism (See also Section 4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE – CYP2D6 metabolism).

### **Effects on laboratory tests**

Uric acid and blood glucose: Intake of paracetamol may affect the laboratory determination of uric acid by phosphotungstic acid and of blood glucose by glucose oxidase-peroxidase.

## **4.5 INTERACTIONS WITH OTHER MEDICINES AND OTHER FORMS OF INTERACTIONS**

The concomitant use of opioids with benzodiazepines and/or other CNS depressants (e.g. other opioid analgesics, antitussives, antihypertensives, antihistamines, antipsychotics, antianxiety, gabapentinoids, cannabis, centrally-active anti-emetics, hypnotics, sedatives, tranquillisers), including alcohol, may result in additive CNS depression and increases the risk of sedation, respiratory depression, coma and death (see Section 4.4 SPECIAL WARNINGS AND

**PRECAUTIONS FOR USE** – Risks from concomitant use of benzodiazepines or other CNS depressants, including alcohol).

The concomitant use of alcohol and opioids increases the risk of sedation, respiratory depression, coma and death because of additive CNS depressant effect. Concomitant use with alcohol is not recommended (see Section 4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE).

Concomitant administration of Monoamine Oxidase Inhibitors (MAOIs) can potentiate the central nervous effects and other side effects of unpredictable severity. Codeine should not be used within 14 days after the discontinuation of MAOI treatment.

A codeine-induced respiratory depression can be potentiated by tricyclic antidepressants.

Concomitant use of codeine with antiperistaltic antidiarrhoeal drugs can increase the risk of severe constipation and CNS depression.

Morphinic agonists-antagonists – Concomitant use of codeine with a partial agonist (e.g. buphenorphine) or antagonist (e.g. naltrexone) can precipitate or delay codeine effects.

The risk of paracetamol toxicity may be increased in patients receiving other potentially hepatotoxic drugs or drugs that induce liver microsomal enzymes, such as barbiturates and other antiepileptics (such as phenobarbital, phenytoin, carbamazepine, topiramate), rifampicin and alcohol. The induced metabolism results in an elevated production of the hepatotoxic oxidative metabolite of paracetamol. Hepatotoxicity will occur if this metabolite exceeds the normal glutathione binding capacity.

Paracetamol may increase the risk of bleeding in patients taking warfarin and other antivitamin K. Patients taking paracetamol and antivitamin K should be monitored for appropriate coagulation and bleeding complications.

Paracetamol may considerably slow down the excretion of chloramphenicol, entailing the risk of increased toxicity. When used concurrently with zidovudine, an increased tendency for neutropenia may develop. Combination of Mersyndol and zidovudine should be avoided.

Concurrent intake of drugs, which delay gastric emptying, such as propantheline, may slow down the uptake of paracetamol, thereby retarding its onset of action. Conversely, drugs, which accelerate gastric emptying, such as metoclopramide or domperidone, may accelerate the absorption rate of paracetamol and its onset of action.

Chelating resin can decrease the intestinal absorption of paracetamol and potentially decrease its efficacy if taken simultaneously. In general, there must be an interval of more than 2 hours between taking the resin and taking paracetamol, if possible.

Co-administration of flucloxacillin with paracetamol may lead to metabolic acidosis, particularly in patients presenting risk factors of glutathione depletion, such as sepsis, malnutrition or chronic alcoholism.

*CYP2D6 inhibitors:* Codeine is metabolized by the liver enzyme CYP2D6 to its active metabolite morphine. Medicines that inhibit CYP2D6 activity may reduce the analgesic effect of codeine. Patients taking codeine and moderate to strong CYP2D6 inhibitors (such as fluoxetine, paroxetine, bupropion, cinacalcet, methadone) should be adequately monitored for reduced efficacy and withdrawal signs and symptoms. If necessary, an adjustment of the treatment should be considered.

*CYP3A4 inducers:* Medicines that induce CYP3A4 activity may reduce the analgesic effect of codeine. Patients taking codeine and CYP3A4 inducers (such as rifampin) should be adequately monitored for reduced efficacy and withdrawal signs and symptoms. If necessary, an adjustment of the treatment should be considered.

## **4.6 FERTILITY, PREGNANCY AND LACTATION**

### **Effects on fertility**

No data available

### **Use in pregnancy**

Category A. There have been no observations of an increase in the frequency of malformations or other direct or indirect harmful effects on the foetus in pregnant women and women of child-bearing age who have taken those drugs found in Mersyndol. Codeine may cause respiratory depression and withdrawal syndrome in neonates born to mothers who use codeine during the third trimester of pregnancy. As a precautionary measure, use of Mersyndol should be avoided during the third trimester of pregnancy and during labour. Mersyndol should only be used during pregnancy under medical supervision if the potential benefit justifies the potential risk to the foetus. If administered during pregnancy, morphinomimetic properties of codeine should be taken into account.

### **Use in lactation**

Mersyndol is contraindicated during breast-feeding (see Section 4.3 CONTRAINDICATIONS and Section 4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE – CYP2D6 metabolism) due to risk of respiratory depression in the infant. There are no data available on the use of Mersyndol during lactation. Paracetamol, doxylamine and codeine are excreted into human breast milk. Analgesic doses excreted in breast milk are generally low. However, infants of breastfeeding mothers taking codeine may have an increased risk of morphine overdose if the mother is an ultrarapid metaboliser of codeine. Codeine is partially metabolised by cytochrome P4502D6 (CYP2D6) into morphine, which is excreted into breast milk. If nursing mothers are CYP2D6 ultra-rapid metabolisers, higher levels of morphine may be present in their breast milk. This may result in symptoms of opioid toxicity in both mother and the breast-fed infant. Life-threatening adverse events or neonatal death may occur even at therapeutic doses (see Section 4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE – CYP2D6 metabolism).

Therefore, Mersyndol is contraindicated for use during breastfeeding. However, in circumstances where a breastfeeding mother requires codeine therapy, breastfeeding should be suspended and alternative arrangements should be made for feeding the infant for any period during codeine treatment. Breastfeeding mothers should be told how to recognise signs of high morphine levels in themselves and their babies. For example, in a mother, symptoms include extreme sleepiness and trouble caring for the baby. In the baby, symptoms include signs of increased sleepiness (more than usual), difficulty breastfeeding, breathing difficulties, or limpness. Medical advice should be sought immediately.

#### **4.7 EFFECTS ON ABILITY TO DRIVE AND USE MACHINES**

Mersyndol may cause drowsiness, disturbances of visuomotor coordination and visual acuity and or dizziness. Due to the preparation's sedative action, psychomotor impairment impacting the mental and/or physical abilities required for the performance of potentially hazardous activities may occur. Patients treated with this medicine should not drive or operate machinery or drink alcohol whilst taking this medication.

#### **4.8 ADVERSE EFFECTS (UNDESIRABLE EFFECTS)**

Side-effects with Mersyndol are infrequent. However, among those reported are: anorexia, drowsiness, depression, dizziness, sweating, anaphylactic shock, angioneurotic oedema, angioedema, difficulty in breathing, drop in blood pressure, gastrointestinal discomfort such as nausea and diarrhoea, dry mouth and, on rare occasions, erythema, urticaria, rash.

Paracetamol may occasionally cause skin reactions and isolated cases of agranulocytosis and thrombocytopenic purpura have been reported. Changes in blood picture (rarely thrombocytopenia, neutropenia, leukopenia, and, in isolated cases, pancytopenia) may occur.

Bronchospasm may be triggered in patients having a tendency of analgesic asthma.

Toxic epidermal necrolysis (TEN), Stevens-Johnson syndrome (SJS), acute generalised exanthematous pustulosis, fixed drug eruption and cytolytic hepatitis, which may lead to acute hepatic failure, have also been reported.

Doxylamine succinate may cause drowsiness in some individuals, as well as paradoxical stimulation, psychomotor impairment, blurred vision, thickened respiratory secretions, gastrointestinal disorders and urinary retention. Constipation and pancreatitis may occur in association with codeine.

Haemolytic anaemia, particularly in patients with underlying glucose 6-phosphate-dehydrogenase deficiency has been reported. Kounis syndrome and bronchospasm have also been reported, as has pyroglutamic acidosis in patients with pre-disposing factors for glutathione depletion.

Adverse effects reported relating specifically to the codeine component are: hypersensitivity, confusional state, dysphoria, euphoria, seizure, headache, somnolence, dizziness, hypotension sedation, miosis, tinnitus, respiratory depression, constipation, vomiting, nausea, dry mouth, pruritus, urinary retention, and fatigue. Long term use also entails the risk of drug dependence. Visuomotor coordination and visual acuity may be adversely affected in a dose-dependent manner at higher doses or in particularly sensitive patients.

### **Reporting suspected adverse effects**

Reporting suspected adverse reactions after registration 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 at [www.tga.gov.au/reporting-problems](http://www.tga.gov.au/reporting-problems).

### **4.9 OVERDOSE**

Elderly persons, small children, patients with liver disorders, chronic alcohol consumption or chronic malnutrition, as well as patients concomitantly treated with enzyme-inducing drugs are at an increased risk of intoxication, including fatal outcome.

It has been reported that paracetamol may produce symptoms of acute toxicity in adults, following the ingestion of more than 15g. Hepatotoxicity may develop after the ingestion of a single dose of 10 to 15g (200 to 250 mg/kg) and a dose of more than 25g is potentially fatal. Nausea, vomiting, anorexia, pallor and abdominal pain generally appear during the first 24 hours of overdosage with paracetamol. Overdosage with paracetamol may cause hepatic cytolysis which can lead to hepatocellular insufficiency, gastrointestinal bleeding, metabolic acidosis, encephalopathy, disseminated intravascular coagulation, coma and death. Increased levels of hepatic transaminases, lactate dehydrogenase and bilirubin with a reduction in prothrombin level can appear 12 to 48 hours after acute overdosage. It can also lead to pancreatitis, acute renal failure and pancytopenia. Patients may be asymptomatic for several days following ingestion of large doses of paracetamol and laboratory evidence of hepatotoxicity may be delayed for up to one week. Non-fatal hepatic damage is usually reversible. The antidote, N-acetylcysteine, should be administered as early as possible.

Despite lack of significant early symptoms, patients should be referred to hospital urgently for immediate medical attention.

Determinations of the plasma concentration of paracetamol are recommended.

Plasma concentration of paracetamol should be measured at 4 hours or later after ingestion (earlier concentrations are unreliable).

Where paracetamol intoxication is suspected, intravenous administration of SH group donors such as acetylcysteine within the first 10 hours after ingestion is indicated. Although acetylcysteine is most effective if initiated within this period, it can still offer some degree of protection if given as late as 48 hours after ingestion; in this case it is taken for longer.

In an evaluation of codeine intoxication in children, symptoms ranked by decreasing order of frequency included sedation, rash, miosis, vomiting, itching, ataxia and swelling of the skin. Respiratory failure may occur. Blood concentrations of codeine ranged from 1.4 to 5.6 µg/mL in eight adults whose deaths were attributed primarily to codeine overdose.

The ingestion of very high doses of codeine can cause initial excitation, anxiety, insomnia followed by drowsiness in certain cases, areflexia progressing to stupor or coma, headache, miosis, alterations in blood pressure, arrhythmias, dry mouth, hypersensitivity reactions, cold clammy skin, bradycardia, tachycardia, convulsions, gastrointestinal disorders, nausea, vomiting and respiratory depression.

Severe intoxication can lead to apnoea, circulatory collapse, cardiac arrest and death. Relating to codeine component:

In general, treatment should be symptomatic: re-establish adequate respiratory exchange by ensuring a clear airway and using mechanical ventilation. When treatment for paracetamol toxicity has been initiated the opioid antagonist naloxone hydrochloride is an antidote to respiratory depression; naloxone 400 microgram may be administered SC, IM or IV. Reactions associated with doxylamine overdose may vary from CNS depression to stimulation. Stimulation is particularly likely in children; insomnia, nervousness, euphoria, irritability, tremors, nightmares, hallucinations and convulsions can occur. Atropine-like signs and symptoms such as dry mouth, fixed, dilated pupils, flushing and gastrointestinal symptoms may also occur.

Further measures will depend on the severity, nature and course of clinical symptoms of intoxication and should follow standard intensive care protocols.

For information on the management of overdose, contact the Poisons Information Centre on 131126 (Australia).

## **5 PHARMACOLOGICAL PROPERTIES**

### **5.1 PHARMACODYNAMIC PROPERTIES**

#### **Mechanism of action**

Paracetamol is an analgesic and antipyretic. It reduces fever by a direct effect on the heat-regulating centres to increase dissipation of body heat.

Codeine phosphate hemihydrate acts centrally on opiate receptors. Its analgesic effect is thought to be due mainly to its partial metabolic conversion to morphine. Codeine has about one-sixth the analgesic activity of morphine.

Doxylamine succinate belongs to the ethanolamine class of antihistamines with sedative and calmative properties. Its calmative effect is useful in enhancing the effects of analgesics.

## **Clinical trials**

No data available

## **5.2 PHARMACOKINETIC PROPERTIES**

### **Absorption**

Paracetamol is rapidly absorbed from the gastrointestinal tract with peak plasma levels usually reached half to one hour after oral administration.

Codeine phosphate is well absorbed from the gastrointestinal tract after oral administration.

## **5.3 PRECLINICAL SAFETY DATA**

### **Genotoxicity**

No data available

### **Carcinogenicity**

No data available

## **6 PHARMACEUTICAL PARTICULARS**

### **6.1 LIST OF EXCIPIENTS**

Mersyndol also contains sodium starch glycollate, purified talc, magnesium stearate, microcrystalline cellulose, quinoline yellow (CI 47005) and sunset yellow FCF (CI 15985).

### **6.2 INCOMPATIBILITIES**

No data available.

### **6.3 SHELF LIFE**

In Australia, information on the shelf life can be found on the public summary of the Australian Register of Therapeutic Goods (ARTG). The expiry date can be found on the packaging.

### **6.4 SPECIAL PRECAUTIONS FOR STORAGE**

Store below 30°C

## 6.5 NATURE AND CONTENTS OF CONTAINER

Mersyndol is available in packs of 10, 20 and 40 tablets.

Mersyndol Caplets is available in packs of 10, 20 and 40 caplets.

Not all pack sizes are marketed.

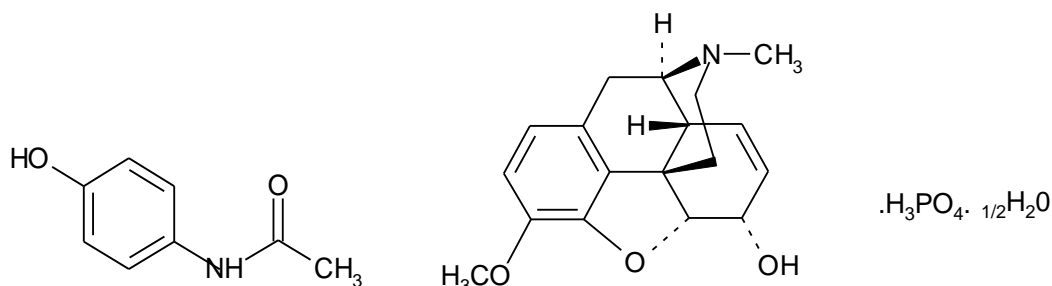
## 6.6 SPECIAL PRECAUTIONS FOR DISPOSAL

In Australia, any unused medicine or waste material should be disposed of by taking to your local pharmacy.

## 6.7 PHYSICOCHEMICAL PROPERTIES

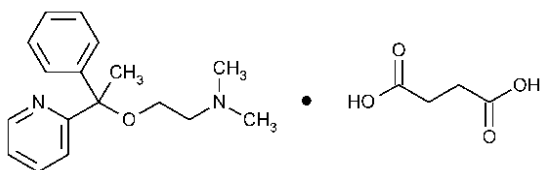
Paracetamol is an odourless, crystalline powder or crystals with a bitter taste. Codeine phosphate hemihydrate is an odourless, crystalline powder or small colourless crystals with a bitter taste. Doxylamine succinate is a powder with a characteristic odour.

### Chemical structure



Paracetamol

Codeine phosphate hemihydrate



Doxylamine succinate

### CAS number

Paracetamol: 103-90-2

Codeine phosphate hemihydrate: 41444-62-6



Doxylamine succinate: 562-10-7

## **7 MEDICINE SCHEDULE (POISONS STANDARD)**

Prescription Only Medicine (Schedule 4)

## **8 SPONSOR**

sanofi-aventis australia pty ltd  
12-24 Talavera Road  
Macquarie Park NSW 2113  
Toll Free Number (medical information): 1800 818 806  
Email: [medinfo.australia@sanofi.com](mailto:medinfo.australia@sanofi.com)

## **9 DATE OF FIRST APPROVAL**

8 July 1991

## **10 DATE OF REVISION**

19 November 2021

### **SUMMARY TABLE OF CHANGES**

<b>Section Changed</b>	<b>Summary of new information</b>
4.8	Addition of pyroglutamic acidosis, in patients with pre-disposing factors for glutathione depletion.