

**CARISOPRODOL- carisoprodol tablet**  
**Mutual Pharmaceutical Company, Inc.**

-----

**HIGHLIGHTS OF PRESCRIBING INFORMATION**

**These highlights do not include all the information needed to use CARISOPRODOL tablets USP safely and effectively. See full prescribing information for carisoprodol.**

**CARISOPRODOL tablets, USP for oral use, C-IV**

**Initial U.S. Approval: 1959**

----- **INDICATIONS AND USAGE** -----

Carisoprodol tablets are indicated for the relief of discomfort associated with acute, painful musculoskeletal conditions in adults (1)

Limitations of Use:

Should only be used for acute treatment periods up to two or three weeks (1)

----- **DOSAGE AND ADMINISTRATION** -----

Recommended dose is 250 mg to 350 mg three times a day and at bedtime. (2)

----- **DOSAGE FORMS AND STRENGTHS** -----

Tablets: 350 mg (3)

----- **CONTRAINDICATIONS** -----

- Acute intermittent porphyria (4)
- Hypersensitivity reactions to a carbamate such as meprobamate (4)

----- **WARNINGS AND PRECAUTIONS** -----

- Due to sedative properties, may impair ability to perform hazardous tasks such as driving or operating machinery (5.1)
- Additive sedative effects when used with other CNS depressants including alcohol (5.1)
- Cases of abuse, dependence, and withdrawal (5.2, 9.2, 9.3)
- Seizures (5.3)

----- **ADVERSE REACTIONS** -----

Most common adverse reactions (incidence > 2%) are drowsiness, dizziness, and headache (6.1)

**To report SUSPECTED ADVERSE REACTIONS, contact Mutual Pharmaceutical Company, Inc. at 1-888-351-3786 or [drugsafety@urlpharma.com](mailto:drugsafety@urlpharma.com) or FDA at 1-800-FDA-1088 or [www.fda.gov/medwatch](http://www.fda.gov/medwatch).**

----- **DRUG INTERACTIONS** -----

CNS depressants (e.g., alcohol, benzodiazepines, opioids, tricyclic antidepressants) - additive sedative effects (5.1, 7.1)

**See 17 for PATIENT COUNSELING INFORMATION.**

**Revised: 2/2014**

---

**FULL PRESCRIBING INFORMATION: CONTENTS\***

**1 INDICATIONS AND USAGE**

**2 DOSAGE AND ADMINISTRATION**

**3 DOSAGE FORMS AND STRENGTHS**

**4 CONTRAINDICATIONS**

**5 WARNINGS AND PRECAUTIONS**

5.1 Sedation

5.2 Abuse, Dependence, and Withdrawal

5.3 Seizures

**6 ADVERSE REACTIONS**

6.1 Clinical Studies Experience

6.2 Post-marketing Experience

**7 DRUG INTERACTIONS**

7.1 CNS Depressants

7.2 CYP2C19 Inhibitors and Inducers

## **8 USE IN SPECIFIC POPULATIONS**

8.1 Pregnancy: Pregnancy Category C.

8.2 Labor and Delivery

8.3 Nursing Mothers

8.4 Pediatric Use

8.5 Geriatric Use

8.6 Renal Impairment

8.7 Hepatic Impairment

8.8 Patients with Reduced CYP2C19 Activity

## **9 DRUG ABUSE AND DEPENDENCE**

9.1 Controlled Substance

9.2 Abuse

9.3 Dependence

## **10 OVERDOSAGE**

## **11 DESCRIPTION**

## **12 CLINICAL PHARMACOLOGY**

12.1 Mechanism of Action

12.2 Pharmacodynamics

12.3 Pharmacokinetics

## **13 NONCLINICAL TOXICOLOGY**

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

## **14 CLINICAL STUDIES**

## **16 HOW SUPPLIED/STORAGE AND HANDLING**

## **17 PATIENT COUNSELING INFORMATION**

17.1 Sedation

17.2 Avoidance of Alcohol and Other CNS Depressants

17.3 Carisoprodol Should Only Be Used for Short-Term Treatment

\* Sections or subsections omitted from the full prescribing information are not listed.

---

## **FULL PRESCRIBING INFORMATION**

### **1 INDICATIONS AND USAGE**

Carisoprodol tablets are indicated for the relief of discomfort associated with acute, painful musculoskeletal conditions in adults.

Carisoprodol tablets should only be used for short periods (up to two or three weeks) because adequate evidence of effectiveness for more prolonged use has not been established and because acute, painful musculoskeletal conditions are generally of short duration [see *Dosage and Administration (2)*].

### **2 DOSAGE AND ADMINISTRATION**

The recommended dose of carisoprodol tablets is 250 mg to 350 mg three times a day and at bedtime. The recommended maximum duration of carisoprodol tablets use is up to two or three weeks.

### **3 DOSAGE FORMS AND STRENGTHS**

Carisoprodol tablets USP, 350 mg are white, round, debossed MP 58 on one side and blank on the other

side.

## 4 CONTRAINDICATIONS

Carisoprodol tablets USP are contraindicated in patients with a history of acute intermittent porphyria or a hypersensitivity reaction to a carbamate such as meprobamate.

## 5 WARNINGS AND PRECAUTIONS

### 5.1 Sedation

Carisoprodol has sedative properties (in the low back pain trials, 13% to 17% of patients who received carisoprodol tablets USP experienced sedation compared to 6% of patients who received placebo) [*see ADVERSE REACTIONS (6.1)*] and may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a motor vehicle or operating machinery. There have been post-marketing reports of motor vehicle accidents associated with the use of carisoprodol.

Since the sedative effects of carisoprodol and other CNS depressants (e.g., alcohol, benzodiazepines, opioids, tricyclic antidepressants) may be additive, appropriate caution should be exercised with patients who take more than one of these CNS depressants simultaneously.

### 5.2 Abuse, Dependence, and Withdrawal

Carisoprodol, the active ingredient in carisoprodol tablets USP, has been subject to abuse, dependence, withdrawal, misuse, and criminal diversion [*see Drug Abuse and Dependence (9.1, 9.2, 9.3)*]. Abuse of carisoprodol poses a risk of overdose which may lead to death, CNS and respiratory depression, hypotension, seizures, and other disorders [*see Overdosage (10)*].

Post-marketing experience cases of carisoprodol abuse and dependence have been reported in patients with prolonged use and a history of drug abuse. Although most of these patients took other drugs of abuse, some patients solely abused carisoprodol. Withdrawal symptoms have been reported following abrupt cessation of carisoprodol after prolonged use. Reported withdrawal symptoms included insomnia, vomiting, abdominal cramps, headache, tremors, muscle twitching, ataxia, hallucinations, and psychosis. One of carisoprodol's metabolites, meprobamate (a controlled substance), may also cause dependence [*see Clinical Pharmacology (12.3)*].

To reduce the risk of carisoprodol abuse, assess the risk of abuse prior to prescribing. After prescribing, limit the length of treatment to three weeks for the relief of acute musculoskeletal discomfort, keep careful prescription records, monitor for signs of abuse and overdose, and educate patients and their families about abuse and on proper storage and disposal.

### 5.3 Seizures

There have been post-marketing reports of seizures in patients who received carisoprodol. Most of these cases have occurred in the setting of multiple drug overdoses (including drugs of abuse, illegal drugs, and alcohol) [*see Overdosage (10)*].

## 6 ADVERSE REACTIONS

### 6.1 Clinical Studies Experience

Because clinical studies are conducted under widely varying conditions, adverse reaction rates observed in clinical studies of a drug cannot be directly compared to rates in the clinical studies of another drug and may not reflect rates observed in practice.

The data described below are based on 1387 patients pooled from two double blind, randomized,

multicenter, placebo controlled, one-week trials in adult patients with acute, mechanical, lower back pain [see *Clinical Studies (14)*]. In these studies, patients were treated with 250 mg of carisoprodol, 350 mg of carisoprodol, or placebo three times a day and at bedtime for seven days. The mean age was about 41 years old with 54% females and 46% males and 74% Caucasian, 16% Black, 9% Asian, and 2% other.

There were no deaths and there were no serious adverse reactions in these two trials. In these two studies, 2.7%, 2%, and 5.4%, of patients treated with placebo, 250 mg of carisoprodol, and 350 mg of carisoprodol, respectively, discontinued due to adverse events; and 0.5%, 0.5%, and 1.8% of patients treated with placebo, 250 mg of carisoprodol, and 350 mg of carisoprodol, respectively, discontinued due to central nervous system adverse reactions.

Table 1 displays adverse reactions reported with frequencies greater than 2% and more frequently than placebo in patients treated with carisoprodol in the two trials described above.

**Table 1. Patients with Adverse Reactions in Controlled Studies**

<b>Adverse Reaction</b>	<b>Placebo (n=560) n (%)</b>	<b>Carisoprodol 250 mg (n=548) n (%)</b>	<b>Carisoprodol 350 mg (n=279) n (%)</b>
Drowsiness	31 (6)	73 (13)	47 (17)
Dizziness	11 (2)	43 (8)	19 (7)
Headache	11 (2)	26 (5)	9 (3)

## 6.2 Post-marketing Experience

The following events have been reported during postapproval use of carisoprodol. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

*Cardiovascular:* Tachycardia, postural hypotension, and facial flushing [see *Overdosage (10)*].

*Central Nervous System:* Drowsiness, dizziness, vertigo, ataxia, tremor, agitation, irritability, headache, depressive reactions, syncope, insomnia, and seizures [see *Overdosage (10)*].

*Gastrointestinal:* Nausea, vomiting, and epigastric discomfort.

*Hematologic:* Leukopenia, pancytopenia

## 7 DRUG INTERACTIONS

### 7.1 CNS Depressants

The sedative effects of carisoprodol and other CNS depressants (e.g., alcohol, benzodiazepines, opioids, tricyclic antidepressants) may be additive. Therefore, caution should be exercised with patients who take more than one of these CNS depressants simultaneously. Concomitant use of carisoprodol and meprobamate, a metabolite of carisoprodol, is not recommended [see *Warnings and Precautions (5.1)*].

### 7.2 CYP2C19 Inhibitors and Inducers

Carisoprodol is metabolized in the liver by CYP2C19 to form meprobamate [see *Clinical Pharmacology (12.3)*]. Co-administration of CYP2C19 inhibitors, such as omeprazole or fluvoxamine, with carisoprodol could result in increased exposure of carisoprodol and decreased exposure of meprobamate. Co-administration of CYP2C19 inducers, such as rifampin or St. John's Wort, with carisoprodol could result in decreased exposure of carisoprodol and increased exposure of meprobamate. Low dose aspirin also showed an induction effect on CYP2C19. The full

pharmacological impact of these potential alterations of exposures in terms of either efficacy or safety of carisoprodol is unknown.

## **8 USE IN SPECIFIC POPULATIONS**

### **8.1 Pregnancy: Pregnancy Category C.**

There are no data on the use of carisoprodol during human pregnancy. Animal studies indicate that carisoprodol crosses the placenta and results in adverse effects on fetal growth and postnatal survival. The primary metabolite of carisoprodol, meprobamate, is an approved anxiolytic. Retrospective, post-marketing studies do not show a consistent association between maternal use of meprobamate and an increased risk for particular congenital malformations.

*Teratogenic effects:* Animal studies have not adequately evaluated the teratogenic effects of carisoprodol. There was no increase in the incidence of congenital malformations noted in reproductive studies in rats, rabbits, and mice treated with meprobamate. Retrospective, post-marketing studies of meprobamate during human pregnancy were equivocal for demonstrating an increased risk of congenital malformations following first trimester exposure. Across studies that indicated an increased risk, the types of malformations were inconsistent.

*Nonteratogenic effects:* In animal studies, carisoprodol reduced fetal weights, postnatal weight gain, and postnatal survival at maternal doses equivalent to 1–1.5 times the human dose (based on a body surface area comparison). Rats exposed to meprobamate *in-utero* showed behavioral alterations that persisted into adulthood. For children exposed to meprobamate *in-utero*, one study found no adverse effects on mental or motor development or IQ scores. Carisoprodol should be used during pregnancy only if the potential benefit justifies the risk to the fetus.

### **8.2 Labor and Delivery**

There is no information about the effects of carisoprodol on the mother and the fetus during labor and delivery.

### **8.3 Nursing Mothers**

Very limited data in humans show that carisoprodol is present in breast milk and may reach concentrations two to four times the maternal plasma concentrations. In one case report, a breast-fed infant received about 4–6% of the maternal daily dose through breast milk and experienced no adverse effects. However, milk production was inadequate and the baby was supplemented with formula. In lactation studies in mice, female pup survival and pup weight at weaning were decreased. This information suggests that maternal use of carisoprodol may lead to reduced or less effective infant feeding (due to sedation) and/or decreased milk production. Caution should be exercised when carisoprodol is administered to a nursing woman.

### **8.4 Pediatric Use**

The efficacy, safety, and pharmacokinetics of carisoprodol in pediatric patients less than 16 years of age have not been established.

### **8.5 Geriatric Use**

The efficacy, safety, and pharmacokinetics of carisoprodol in patients over 65 years old have not been established.

### **8.6 Renal Impairment**

The safety and pharmacokinetics of carisoprodol in patients with renal impairment have not been evaluated. Since carisoprodol is excreted by the kidney, caution should be exercised if carisoprodol is administered to patients with impaired renal function. Carisoprodol is dialyzable by hemodialysis and

peritoneal dialysis.

## **8.7 Hepatic Impairment**

The safety and pharmacokinetics of carisoprodol in patients with hepatic impairment have not been evaluated. Since carisoprodol is metabolized in the liver, caution should be exercised if carisoprodol is administered to patients with impaired hepatic function.

## **8.8 Patients with Reduced CYP2C19 Activity**

Patients with reduced CYP2C19 activity have higher exposure to carisoprodol. Therefore, caution should be exercised in administration of carisoprodol to these patients [*see Clinical Pharmacology (12.3)*].

# **9 DRUG ABUSE AND DEPENDENCE**

## **9.1 Controlled Substance**

Carisoprodol tablets USP contain carisoprodol, a Schedule IV controlled substance. Carisoprodol has been subject to abuse, misuse, and criminal diversion for nontherapeutic use [*see Warnings and Precautions (5.2)*].

## **9.2 Abuse**

Abuse of carisoprodol poses a risk of overdose which may lead to death, CNS and respiratory depression, hypotension, seizures and other disorders [*see Warnings and Precautions (5.2) and Overdosage (10)*]. Patients at high risk of carisoprodol abuse may include those with prolonged use of carisoprodol, with a history of drug abuse, or those who use carisoprodol in combination with other abused drugs.

Prescription drug abuse is the intentional non-therapeutic use of a drug, even once, for its rewarding psychological effects. Drug addiction, which develops after repeated drug abuse, is characterized by a strong desire to take a drug despite harmful consequences, difficulty in controlling its use, giving a higher priority to drug use than to obligations, increased tolerance, and sometimes physical withdrawal. Drug abuse and drug addiction are separate and distinct from physical dependence and tolerance (for example, abuse or addiction may not be accompanied by tolerance or physical dependence) [*see Drug Abuse and Dependence (9.3)*].

## **9.3 Dependence**

Tolerance is when a patient's reaction to a specific dosage and concentration is progressively reduced in the absence of disease progression, requiring an increase in the dosage to maintain the same. Physical dependence is characterized by withdrawal symptoms after abrupt discontinuation or a significant dose reduction of a drug. Both tolerance and physical dependence have been reported with the prolonged use of carisoprodol. Reported withdrawal symptoms with carisoprodol include insomnia, vomiting, abdominal cramps, headache, tremors, muscle twitching, anxiety, ataxia, hallucinations, and psychosis. Instruct patients taking large doses of carisoprodol or those taking the drug for a prolonged time to not abruptly stop carisoprodol [*see Warnings and Precautions (5.2)*].

# **10 OVERDOSAGE**

Overdosage of carisoprodol commonly produces CNS depression. Death, coma, respiratory depression, hypotension, seizures, delirium, hallucinations, dystonic reactions, nystagmus, blurred vision, mydriasis, euphoria, muscular incoordination, rigidity, and/or headache have been reported with carisoprodol overdosage. Serotonin syndrome has been reported with carisoprodol intoxication. Many of the carisoprodol overdoses have occurred in the setting of multiple drug overdoses (including drugs

of abuse, illegal drugs, and alcohol). The effects of an overdose of carisoprodol and other CNS depressants (e.g., alcohol, benzodiazepines, opioids, tricyclic antidepressants) can be additive even when one of the drugs has been taken in the recommended dosage. Fatal accidental and non-accidental overdoses of carisoprodol have been reported alone or in combination with CNS depressants.

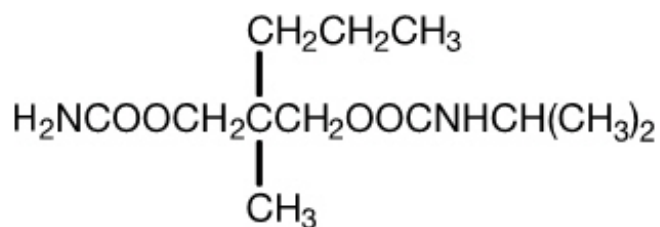
**Treatment of Overdosage:** Basic life support measures should be instituted as dictated by the clinical presentation of the carisoprodol overdose. Vomiting should not be induced because of the risk of CNS and respiratory depression, and subsequent aspiration. Circulatory support should be administered with volume infusion and vasopressor agents if needed. Seizures should be treated with intravenous benzodiazepines and the reoccurrence of seizures may be treated with phenobarbital. In cases of severe CNS depression, airway protective reflexes may be compromised and tracheal intubation should be considered for airway protection and respiratory support.

For decontamination in cases of severe toxicity, activated charcoal should be considered in a hospital setting in patients with large overdoses who present early and are not demonstrating CNS depression and can protect their airway.

For more information on the management of an overdose of carisoprodol, **contact a Poison Control Center.**

## 11 DESCRIPTION

Carisoprodol tablets USP are available as 350 mg round, white tablets. Carisoprodol is a white, crystalline powder, having a mild, characteristic odor and a bitter taste. It is slightly soluble in water; freely soluble in alcohol, in chloroform, and in acetone; and its solubility is practically independent of pH. Carisoprodol is present as a racemic mixture. Chemically, carisoprodol is N-isopropyl-2-methyl-2-propyl-1,3-propanediol dicarbamate and the molecular formula is  $C_{12}H_{24}N_2O_4$ , with a molecular weight of 260.33. The structural formula is:



Other ingredients in the carisoprodol tablets include corn starch, lactose, magnesium stearate, povidone, sodium lauryl sulfate, sodium starch glycolate, and stearic acid.

## 12 CLINICAL PHARMACOLOGY

### 12.1 Mechanism of Action

The mechanism of action of carisoprodol in relieving discomfort associated with acute painful musculoskeletal conditions has not been clearly identified.

In animal studies, muscle relaxation induced by carisoprodol is associated with altered interneuronal activity in the spinal cord and in the descending reticular formation of the brain.

### 12.2 Pharmacodynamics

Carisoprodol is a centrally acting skeletal muscle relaxant that does not directly relax skeletal muscles.

A metabolite of carisoprodol, meprobamate, has anxiolytic and sedative properties. The degree to which these properties of meprobamate contribute to the safety and efficacy of carisoprodol is unknown.

### 12.3 Pharmacokinetics

The pharmacokinetics of carisoprodol and its metabolite meprobamate were studied in a crossover study of 24 healthy subjects (12 male and 12 female) who received single doses of 250 mg and 350 mg carisoprodol (see Table 2). The exposure of carisoprodol and meprobamate was dose proportional between the 250 mg and 350 mg doses. The  $C_{max}$  of meprobamate was  $2.5 \pm 0.5$  mcg/mL (mean  $\pm$  SD) after administration of a single 350 mg dose of carisoprodol, which is approximately 30% of the  $C_{max}$  of meprobamate (approximately 8 mcg/mL) after administration of a single 400 mg dose of meprobamate.

**Table 2. Pharmacokinetic Parameters of Carisoprodol and Meprobamate (Mean  $\pm$  SD, n=24)**

	250 mg Carisoprodol	350 mg Carisoprodol
<b>Carisoprodol</b>		
$C_{max}$ (mcg/mL)	1.2 $\pm$ 0.5	1.8 $\pm$ 1.0
$AUC_{inf}$ (mcg*hr/mL)	4.5 $\pm$ 3.1	7.0 $\pm$ 5.0
$T_{max}$ (hr)	1.5 $\pm$ 0.8	1.7 $\pm$ 0.8
$T_{1/2}$ (hr)	1.7 $\pm$ 0.5	2.0 $\pm$ 0.5
<b>Meprobamate</b>		
$C_{max}$ (mcg/mL)	1.8 $\pm$ 0.3	2.5 $\pm$ 0.5
$AUC_{inf}$ (mcg*hr/mL)	32 $\pm$ 6.2	46 $\pm$ 9.0
$T_{max}$ (hr)	3.6 $\pm$ 1.7	4.5 $\pm$ 1.9
$T_{1/2}$ (hr)	9.7 $\pm$ 1.7	9.6 $\pm$ 1.5

**Absorption:** Absolute bioavailability of carisoprodol has not been determined. The mean time to peak plasma concentrations ( $T_{max}$ ) of carisoprodol was approximately 1.5 to 2 hours. Co-administration of a high-fat meal with carisoprodol (350 mg tablet) had no effect on the pharmacokinetics of carisoprodol. Therefore, carisoprodol may be administered with or without food.

**Metabolism:** The major pathway of carisoprodol metabolism is via the liver by cytochrome enzyme CYP2C19 to form meprobamate. This enzyme exhibits genetic polymorphism (see *Patients with Reduced CYP2C19 Activity* below).

**Elimination:** Carisoprodol is eliminated by both renal and non-renal routes with a terminal elimination half-life of approximately 2 hours. The half-life of meprobamate is approximately 10 hours.

**Gender:** Exposure of carisoprodol is higher in female than in male subjects (approximately 30–50% on a weight adjusted basis). Overall exposure of meprobamate is comparable between female and male subjects.

**Patients with Reduced CYP2C19 Activity:** Carisoprodol should be used with caution in patients with reduced CYP2C19 activity. Published studies indicate that patients who are poor CYP2C19 metabolizers have a 4-fold increase in exposure to carisoprodol, and concomitant 50% reduced exposure to meprobamate compared to normal CYP2C19 metabolizers. The prevalence of poor metabolizers in Caucasians and African Americans is approximately 3–5% and in Asians is approximately 15–20%.

## 13 NONCLINICAL TOXICOLOGY



### 13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

Long term studies in animals have not been performed to evaluate the carcinogenic potential of carisoprodol.

Carisoprodol was not formally evaluated for genotoxicity. In published studies, carisoprodol was mutagenic in the *in vitro* mouse lymphoma cell assay in the absence of metabolizing enzymes, but was not mutagenic in the presence of metabolizing enzymes. Carisoprodol was clastogenic in the *in vitro* chromosomal aberration assay using Chinese hamster ovary cells with or without the presence of metabolizing enzymes. Other types of genotoxic tests resulted in negative findings. Carisoprodol was not mutagenic in the Ames reverse mutation assay using *S. typhimurium* strains with or without metabolizing enzymes, and was not clastogenic in an *in vivo* mouse micronucleus assay of circulating blood cells.

Carisoprodol was not formally evaluated for effects on fertility. Published reproductive studies of carisoprodol in mice found no alteration in fertility although an alteration in reproductive cycles characterized by a greater time spent in estrus was observed at a carisoprodol dose of 1200 mg/kg/day. In a 13-week toxicology study that did not determine fertility, mouse testes weight and sperm motility were reduced at a dose of 1200 mg/kg/day. In both studies, the no effect level was 750 mg/kg/day, corresponding to approximately 2.6 times the human equivalent dosage of 350 mg four times a day, based on a body surface area comparison. The significance of these findings for human fertility is not known.

## 14 CLINICAL STUDIES

The safety and efficacy of carisoprodol for the relief of acute, idiopathic mechanical low back pain was evaluated in two, 7-day, double blind, randomized, multicenter, placebo controlled, U.S. trials (Studies 1 and 2). Patients had to be 18 to 65 years old and had to have acute back pain ( $\leq 3$  days of duration) to be included in the trials. Patients with chronic back pain; at increased risk for vertebral fracture (e.g., history of osteoporosis); with a history of spinal pathology (e.g., herniated nucleus pulposus, spondylolisthesis or spinal stenosis); with inflammatory back pain, or with evidence of a neurologic deficit were excluded from participation. Concomitant use of analgesics (e.g., acetaminophen, NSAIDs, tramadol, opioid agonists), other muscle relaxants, botulinum toxin, sedatives (e.g., barbiturates, benzodiazepines, promethazine hydrochloride), and anti-epileptic drugs was prohibited.

In Study 1, patients were randomized to one of three treatment groups (i.e., carisoprodol 250 mg, carisoprodol 350 mg, or placebo) and in Study 2 patients were randomized to two treatment groups (i.e., carisoprodol 250 mg or placebo). In both studies, patients received study medication three times a day and at bedtime for seven days.

The primary endpoints were the relief from starting backache and the global impression of change, as reported by patients, on Study Day 3. Both endpoints were scored on a 5-point rating scale from 0 (worst outcome) to 4 (best outcome) in both studies. The primary statistical comparison was between the carisoprodol 250 mg and placebo groups in both studies.

The proportion of patients who used concomitant acetaminophen, NSAIDs, tramadol, opioid agonists, other muscle relaxants, and benzodiazepines was similar in the treatment groups.

The results for the primary efficacy evaluations in the acute, low back pain studies are presented in Table 3.

**Table 3. Results of the Primary Efficacy Endpoints\* in Studies 1 and 2**

Study	Parameter	Placebo	Carisoprodol 250 mg	Carisoprodol 350 mg
-------	-----------	---------	---------------------	---------------------

1	<b>Number of Patients</b>	n=269	n=264	n=273
	<b>Relief from Starting Backache, Mean (SE)<sup>†</sup></b>	1.4 (0.1)	1.8 (0.1)	1.8 (0.1)
	Difference between Carisoprodol and Placebo, Mean (SE) <sup>†</sup> (95% CI)		0.4 (0.2, 0.5)	0.4 (0.2, 0.6)
	<b>Global Impression of Change, Mean (SE)<sup>†</sup></b>	1.9 (0.1)	2.2 (0.1)	2.2 (0.1)
	Difference between Carisoprodol and Placebo, Mean (SE) <sup>†</sup> (95% CI)		0.2 (0.1, 0.4)	0.3 (0.1, 0.4)
2	<b>Number of Patients</b>	n=278	n=269	
	<b>Relief from Starting Backache, Mean (SE)<sup>†</sup></b>	1.1 (0.1)	1.8 (0.1)	
	Difference between Carisoprodol and Placebo, Mean (SE) <sup>†</sup> (95% CI)		0.7 (0.5, 0.9)	
	<b>Global Impression of Change, Mean (SE)<sup>†</sup></b>	1.7 (0.1)	2.2 (0.1)	
	Difference between Carisoprodol and Placebo, Mean (SE) <sup>†</sup> (95% CI)		0.5 (0.4, 0.7)	

\* The primary efficacy endpoints (Relief from Starting Backache and Global Impression of Change) were assessed by the patients on Study Day 3. These endpoints were scored on a 5-point rating scale from 0 (worst outcome) to 4 (best outcome).

† Mean is the least squared mean and SE is the standard error of the mean. The ANOVA model was used for the primary statistical comparison between the carisoprodol 250 mg and placebo groups.

Patients treated with carisoprodol experienced improvement in function as measured by the Roland-Morris Disability Questionnaire (RMDQ) score on Days 3 and 7.

## 16 HOW SUPPLIED/STORAGE AND HANDLING

Carisoprodol tablets USP, 350 mg are white, round, debossed MP 58 on one side and blank on the other side.

Bottles of 20	NDC 53489-110-60
Bottles of 30	NDC 53489-110-07
Bottles of 60	NDC 53489-110-06
Bottles of 100	NDC 53489-110-01
Bottles of 500	NDC 53489-110-05
Bottles of 1000	NDC 53489-110-10

Store at 20° to 25°C (68° to 77°F).

[See USP Controlled Room Temperature]

DISPENSE IN TIGHT, LIGHT-RESISTANT CONTAINER.

## 17 PATIENT COUNSELING INFORMATION

Patients should be advised to contact their physician if they experience any adverse reactions to carisoprodol.

### 17.1 Sedation

Patients should be advised that carisoprodol may cause drowsiness and/or dizziness, and has been

associated with motor vehicle accidents. Patients should be advised to avoid taking carisoprodol before engaging in potentially hazardous activities such as driving a motor vehicle or operating machinery [see *Warnings and Precautions (5.1)*].

### **17.2 Avoidance of Alcohol and Other CNS Depressants**

Patients should be advised to avoid alcoholic beverages while taking carisoprodol and to check with their doctor before taking other CNS depressants such as benzodiazepines, opioids, tricyclic antidepressants, sedating antihistamines, or other sedatives [see *Warnings and Precautions (5.1)*].

### **17.3 Carisoprodol Should Only Be Used for Short-Term Treatment**

Patients should be advised that treatment with carisoprodol should be limited to acute use (up to two or three weeks) for the relief of acute, musculoskeletal discomfort. In the post-marketing experience with carisoprodol, cases of dependence, withdrawal, and abuse have been reported with prolonged use. If the musculoskeletal symptoms still persist, patients should contact their healthcare provider for further evaluation.

Manufactured by:  
MUTUAL PHARMACEUTICAL COMPANY, INC.  
Philadelphia, PA 19124 USA

Rev 08, February 2014

#### **PRINCIPAL DISPLAY PANEL - 100 Tablet Label**

**MP**

**NDC 53489-110-01**

**CARISOPRODOL**

**TABLETS USP**

**CIV**

**350 mg**

100 TABLETS

**Rx only**

**MUTUAL PHARMACEUTICAL CO., INC.**

PHILADELPHIA, PA 19124 USA



## CARISOPRODOL

carisoprodol tablet

### Product Information

Product Type	HUMAN PRESCRIPTION DRUG	Item Code (Source)	NDC:53489-110
Route of Administration	ORAL	DEA Schedule	CIV

### Active Ingredient/Active Moiety

Ingredient Name	Basis of Strength	Strength
Carisoprodol (UNII: 21925K482H) (Carisoprodol - UNII:21925K482H)	Carisoprodol	350 mg

### Inactive Ingredients

Ingredient Name	Strength
starch, corn (UNII: O8232NY3SJ)	
lactose (UNII: J2B2A4N98G)	
magnesium stearate (UNII: 70097M6I30)	
povidones (UNII: FZ989GH94E)	
sodium lauryl sulfate (UNII: 368GB5141J)	
sodium starch glycolate type a potato (UNII: 5856J3G2A2)	
stearic acid (UNII: 4ELV7Z65AP)	

### Product Characteristics

Color	WHITE	Score	no score
Shape	ROUND	Size	12mm

<b>Flavor</b>		<b>Imprint Code</b>	MP;58	
<b>Contains</b>				
<b>Packaging</b>				
<b>#</b>	<b>Item Code</b>	<b>Package Description</b>	<b>Marketing Start Date</b>	<b>Marketing End Date</b>
1	NDC:53489-110-60	20 in 1 BOTTLE, PLASTIC		
2	NDC:53489-110-07	30 in 1 BOTTLE, PLASTIC		
3	NDC:53489-110-06	60 in 1 BOTTLE, PLASTIC		
4	NDC:53489-110-01	100 in 1 BOTTLE, PLASTIC		
5	NDC:53489-110-05	500 in 1 BOTTLE, PLASTIC		
6	NDC:53489-110-10	1000 in 1 BOTTLE, PLASTIC		
<b>Marketing Information</b>				
<b>Marketing Category</b>	<b>Application Number or Monograph Citation</b>	<b>Marketing Start Date</b>	<b>Marketing End Date</b>	
ANDA	ANDA089346	10/17/1991		

**Labeler** - Mutual Pharmaceutical Company, Inc. (121735955)

Revised: 2/2014

Mutual Pharmaceutical Company, Inc.