SECTION-1: Identification of the substance / mixture and the company / undertaking

Catalogue Number	CS-T-93297
Product Name	Lofentanil
CAS No.	61380-40-3
Category	API
Synonyms	(3S,4R)-methyl 3-methyl-1-phenethyl-4-(N-phenylpropionamido)piperidine-4-carboxylate; cis-(-)-3-methyl-4-[(1-oxopropyl)phenylamino]-1-(2-phenylethyl)-4-Piperidinecarboxylic acid methyl ester
Brand	Clearsynth Labs Ltd.
Identified uses	Laboratory Chemicals
Uses advised against	Not available
Company	Clearsynth Labs Ltd. Mumbai, India
Emergency Phone #	+91-22-245045900
REACH No.	Not available

SECTION 2: Hazards identification

Disclaimer: This is sample MSDS. Please email **sales@clearsynth.com** for more details.

2.1 Classification of the substance or mixture-Regulation (EC) No 1272/2008:

Not available

2.2 Label Elements

Signal Word: Not available

Not available

Hazard Statement(s)

Code	Statement
Not available	Not available

Precautionary Statement(s)

Code	Statement
Not available	Not available

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : Lofentanil
CAS Number : 61380-40-3
Molecular Formula : C25H32N2O3
Molecular Weight : 408.53
Parent Chemical : Not available
Synonyms : (3S,4R)-methyl 3-methyl-1-phenethyl-4-(N-phenylpropionamido)piperidine-4-carboxylate; cis-(-)-3-methyl-4-[(1-oxopropyl)phenylamino]-1-(2-phenylethyl)-4-Piperidinecarboxylic acid methyl ester
Concentration : Not available

SECTION 4: First aid measures

Not available

SECTION 5: Firefighting measures

Not available

SECTION 6: Accidental release measures

Not available

SECTION-7: Handling and storage

Not available

SECTION 8: Exposure controls / personal protection

Not available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Test	Result
Appearance	No data available
IR spectrum	No data available
pH	No data available
Solubility	No data available

Property	Value
a) Physical State	No data available
b) Color	No data available
c) Odor	No data available
d) pH	No data available
e) Vapour Pressure	No data available
f) Viscosity	No data available
g) Initial Boiling Point and boiling range	No data available
h) Melting Point / Freezing Point	No data available
i) Auto Ignition Temperature	No data available
j) Flash Point	No data available
k) Explosion Limit, Lower	No data available
l) Explosion Limit, Upper	No data available
m) Decomposition Temperature	No data available
n) Loss on Drying	No data available
o) Relative Density	No data available
p) Solubility (in DMSO)	No data available
q) Oxidizing Properties	No data available

SECTION 10: Stability and reactivity

Not available

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: /LABORATORY ANIMALS: Neurotoxicity/ Antidromic vasodilatation in the hindpaw skin of rats was studied by laser Doppler flowmetry (LDF). Antidromic stimulation of the saphenous nerve (10 V, 1 ms, 2 Hz, 15 s) increased LDF readings more than two-fold. This increase was abolished by acute nerve section, local lidocain or local 1% capsaicin, augmented by guanethidine (20 mg/kg) and unaffected by atropine (1 mg/kg). While mepyramine plus cimetidine (10 mg/kg each) reduced basal LDF readings, they did not change the percent increase after stimulation. [D-Met2, Pro5] enkephalinamide (3 mg/kg) caused a naloxone-reversible inhibition of the stimulation-induced increase. Lofentanil (10 ug/kg i.v.) also caused an inhibition but this was associated with a marked fall in blood pressure. These results indicate that LDF is a suitable non-invasive method for the indirect

measurement of antidromic vasodilatation in rat skin. While opiates appear to inhibit the release of the neurogenic vasoactive mediator(s), histamine is unlikely to be involved in the rapid vasodilator response following antidromic sensory nerve stimulation. /LABORATORY ANIMALS: Neurotoxicity/ The effects of four anilidopiperidine analgesics, fentanyl, sufentanil, lofentanil and alfentanil on the activity of single neurons in the rat brain stem were examined using the technique of microiontophoresis. Neurons whose discharge rate could be related to respiration and non-respiratory neurons were studied. Alfentanil produced depression of neuronal firing which was slow in onset, shallow and prolonged, similar to the responses seen previously with etorphine. These responses were antagonized by naloxone. The depressant responses to fentanyl, sufentanil, and lofentanil were often different in character, being rapid in onset and of short duration, although slow long lasting responses also occurred and sometimes the two responses were combined. However, only the slow response was blocked by naloxone, the fast, short-duration response being naloxone-resistant. No differences in the responses of respiratory and non-respiratory neurons to these drugs were observed.
- Skin corrosion/irritation: No data available.
- Serious eye damage/eye irritation: No data available.
- Respiratory or skin sensitization: No data available.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: IDENTIFICATION AND USE: Lofentanil is a very potent opioid analgesic. It is used clinically in the management of pain. However, the high analgesic potency of this drug is limited by the development of tolerance after chronic use. HUMAN STUDIES: In patients side effects of very low incidence included nausea, vomiting and sedation. Another study mentions drowsiness in three patients as a side effect. ANIMAL STUDIES: Increasing doses of lofentanil (0, 0.08, 0.16, 0.31, 0.63, 1.25, 2.50, 5.00, and 10.0 ug/kg) were administered intravenously to rats to examine the relationship among central nervous system (CNS) depressant dosage, degree of analgesia (inhibition of tail withdrawal reflex), anesthesia (no response to bone-crush injury), and CNS opiate-receptor occupancy. Increasing doses of lofentanil produce increasing analgesia and anesthesia and eventually complete opiate receptor occupancy. Analgesia occurs with doses of lofentanil (0.31 ug/kg) that result in levels of CNS opiate-receptor binding too low to be measured and anesthesia occurs with doses of lofentanil (1.25 ug/kg) that produce occupancy of about 25% of the available opiate receptors in subcortical areas and cortex. In rats a dose eight times the anesthetic dose of lofentanil is needed to saturate virtually all available CNS opiate receptors (10.0 ug/kg).
- Aspiration hazard: No data available.

Likely routes of exposure
- No data available.

Symptoms related to the physical, chemical and toxicological characteristics
- IDENTIFICATION AND USE: Lofentanil is a very potent opioid analgesic. It is used clinically in the management of pain. However, the high analgesic potency of this drug is limited by the development of tolerance after chronic use. HUMAN STUDIES: In patients side effects of very low incidence included nausea, vomiting and sedation. Another study mentions drowsiness in three patients as a side effect. ANIMAL STUDIES: Increasing doses of lofentanil (0, 0.08, 0.16, 0.31, 0.63, 1.25, 2.50, 5.00, and 10.0 ug/kg) were administered intravenously to rats to examine the relationship among central nervous system (CNS) depressant dosage, degree of analgesia (inhibition of tail withdrawal reflex), anesthesia (no response to bone-crush injury), and CNS opiate-receptor occupancy. Increasing doses of lofentanil produce increasing analgesia and anesthesia and eventually complete opiate receptor occupancy. Analgesia occurs with doses of lofentanil (0.31 ug/kg) that result in levels of CNS opiate-receptor binding

too low to be measured and anesthesia occurs with doses of lofentanil (1.25 ug/kg) that produce occupancy of about 25% of the available opiate receptors in subcortical areas and cortex. In rats a dose eight times the anesthetic dose of lofentanil is needed to saturate virtually all available CNS opiate receptors (10.0 ug/kg).

SECTION 12: Ecological information

Not available

SECTION 13: Disposal considerations

Not available

SECTION 14: Transport information

Not available

SECTION 15: Regulatory information

Not available

SECTION 16: Other information

Not available

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