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

Catalogue Number	CS-T-12787
Product Name	Chlorpyriphos-methyl
CAS No.	5598-13-0
Category	Pesticide Standards
Synonyms	O,O-dimethyl O-(3,5,6-trichloropyridin-2-yl) phosphorothioate
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:

Acute toxicity (Category 4)

2.2 Label Elements

Signal Word: Warning

Hazard Statement(s)

Code	Statement
H317	May cause an allergic skin reaction.
H400	Not available
H410	Not available
H302	Harmful if swallowed.

H331	Not available
H334	Not available
H361	Not available
H371	Not available
H372	Not available

Precautionary Statement(s)

Code	Statement
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P272	Not available
P273	Not available
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P321	Specific treatment (see … on this label).
P333+P317	Not available
P362+P364	Take off contaminated clothing and wash it before reuse.
P391	Not available
P501	Dispose of contents/container in accordance with local/regional/national/international regulatio
P233	Not available
P260	Not available
P264	Wash hands thoroughly after handling.
P270	Not available
P271	Use only outdoors or in a well-ventilated area.
P284	Not available
P301+P317	Not available
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316	Not available
P330	Not available
P342+P316	Not available
P403	Not available

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P203	Not available
P308+P316	Not available
P318	Not available
P319	Get medical help if you feel unwell.

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : Chlorpyriphos-methyl
CAS Number : 5598-13-0
Molecular Formula : C7H7Cl3NO3PS
Molecular Weight : 322.52
Parent Chemical : Chlorpyriphos-methyl
Synonyms : O,O-dimethyl O-(3,5,6-trichloropyridin-2-yl) phosphorothioate
Concentration : Not available

SECTION 4: First aid measures

SECTION 4: First-aid measures

4.1 Description of first aid measures
- General advice: Remove contaminated clothing and shoes. Seek medical attention if symptoms occur or persist.
- Inhalation: Move person to fresh air. Keep at rest. If breathing is difficult, seek medical attention.
- Skin contact: Wash with plenty of soap and water. Get medical attention if irritation or symptoms develop.
- Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention if irritation persists.
- Ingestion: Rinse mouth. Do NOT induce vomiting unless directed by medical personnel. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed
- Not available.

4.3 Indication of any immediate medical attention and special treatment needed
- Treat symptomatically. No data available.

SECTION 5: Firefighting measures

SECTION 5: Fire-fighting measures

5.1 Extinguishing media
- Suitable extinguishing media: Water spray, alcohol-resistant foam, dry chemical, carbon dioxide.
- Unsuitable extinguishing media: Not available.

5.2 Special hazards arising from the substance or mixture

- May decompose under fire conditions to release hazardous fumes/gases.
- Hazardous combustion products: Not available.

5.3 Advice for firefighters
- Wear self-contained breathing apparatus (SCBA) and full protective gear.
- Use water spray to cool unopened containers.
- Prevent fire-fighting water from entering drains or waterways.

SECTION 6: Accidental release measures

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
- Avoid breathing dust/vapors/mist.
- Avoid contact with skin and eyes.
- Use appropriate personal protective equipment (see Section 8).
- Ensure adequate ventilation.

6.2 Environmental precautions
- Avoid release to the environment.
- Prevent entry into drains, surface water, and soil.

6.3 Methods and material for containment and cleaning up
- Contain spill. Collect spilled material using non-combustible absorbent (e.g., sand, earth, vermiculite).
- Place in suitable, labeled containers for disposal.
- Clean contaminated area with suitable cleaning methods; avoid generating dust.

6.4 Reference to other sections
- See Section 8 for exposure controls/personal protection and Section 13 for disposal considerations.

SECTION-7: Handling and storage

SECTION 7: Handling and storage

7.1 Precautions for safe handling
- Handle in accordance with good industrial hygiene and safety practice.
- Avoid breathing dust/vapors/mist.
- Avoid contact with skin, eyes, and clothing.
- Use only with adequate ventilation.
- Wash hands thoroughly after handling.

7.2 Conditions for safe storage, including any incompatibilities
- Store in tightly closed container in a cool, dry, well-ventilated place.
- Protect from moisture.
- Keep away from incompatible materials.
- Incompatible materials: Not available.

7.3 Specific end use(s)
- Pesticide standard / laboratory use. No data available.

SECTION 8: Exposure controls / personal protection

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
- Occupational exposure limits: Not available.
- Biological limit values: Not available.

8.2 Exposure controls
- Engineering controls: Use local exhaust ventilation or other engineering controls to maintain airborne levels below applicable limits (if established).
- Personal protective equipment (PPE):
- Eye/face protection: Safety glasses with side shields or chemical splash goggles.
- Skin protection: Protective gloves. Wear protective clothing as appropriate.
- Respiratory protection: If ventilation is inadequate or exposure is possible, use an appropriate respirator.
- Hygiene measures: Remove contaminated clothing and wash before reuse. Do not eat, drink, or smoke when using this product.

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

Property	Value
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

SECTION 10: Stability and reactivity

10.1 Reactivity
- No data available.

10.2 Chemical stability
- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
- No data available.

10.4 Conditions to avoid
- Heat, flames, ignition sources. Other conditions: Not available.

10.5 Incompatible materials
- Not available.

10.6 Hazardous decomposition products
- Not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. Accumulation of ACh at motor nerves causes overstimulation of nicotinic expression at the neuromuscular junction. When this occurs symptoms such as muscle weakness, fatigue, muscle cramps, fasciculation, and paralysis can be seen. When there is an accumulation of ACh at autonomic ganglia this causes overstimulation of nicotinic expression in the sympathetic system. Symptoms associated with this are hypertension, and hypoglycemia. Overstimulation of nicotinic acetylcholine receptors in the central nervous system, due to accumulation of ACh, results in anxiety, headache,

convulsions, ataxia, depression of respiration and circulation, tremor, general weakness, and potentially coma. When there is expression of muscarinic overstimulation due to excess acetylcholine at muscarinic acetylcholine receptors symptoms of visual disturbances, tightness in chest, wheezing due to bronchoconstriction, increased bronchial secretions, increased salivation, lacrimation, sweating, peristalsis, and urination can occur. Certain reproductive effects in fertility, growth, and development for males and females have been linked specifically to organophosphate pesticide exposure. Most of the research on reproductive effects has been conducted on farmers working with pesticides and insecticdes in rural areas. In females menstrual cycle disturbances, longer pregnancies, spontaneous abortions, stillbirths, and some developmental effects in offspring have been linked to organophosphate pesticide exposure. Prenatal exposure has been linked to impaired fetal growth and development. Neurotoxic effects have also been linked to poisoning with OP pesticides causing four neurotoxic effects in humans: cholinergic syndrome, intermediate syndrome, organophosphate-induced delayed polyneuropathy (OPIDP), and chronic organophosphate-induced neuropsychiatric disorder (COPIND). These syndromes result after acute and chronic exposure to OP pesticides. Symptoms of low dose exposure include excessive salivation and eye-watering. Acute dose symptoms include severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. Hypertension, hypoglycemia, anxiety, headache, tremor and ataxia may also result.
- Skin corrosion/irritation: No data available.
- Serious eye damage/eye irritation: /LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ Groups of Fischer 344 rats (10 of each sex) were exposed dermally to Reldan F (purity 96.8%) at levels of 0, 10, 100 or 300 mg/kg bw per day, 6 hr/day, 7 days/week, for 28 days, to evaluate the potential for systemic toxicity. Reldan F was applied in 0.5% methyl cellulose and covered with a semiocclusive dressing. An additional 10 male and 10 female rats in the control and high dose groups were untreated for an additional 2 weeks following the treatment period to assess recovery. Regular observations (including dermal), ophthalmology examinations, detailed clinical observations, body weight, food consumption, hematology (including prothrombin time), clinical chemistry (including cholinesterase activity), urinalysis and organ weights were evaluated. In addition, a gross necropsy was conducted, with extensive histopathological examination of tissues. There were no deaths during the study. Cage-side observations of the dosing-phase animals revealed no abnormal findings. The only treatment-related alteration was periocular soiling at days 22 and 28 in four females given 300 mg/kg bw per day. Local irritant effects were seen from day 8 onwards at 100 and 300 mg/kg bw per day; histopathology identified the responses as hyperplasia, hyperkeratosis and inflammation, which were present at all dose levels. There were no statistically identified body weight differences between any treated groups compared with their respective controls. At the end of 4 weeks, males given 100 or 300 mg/kg bw per day had a 7% and 13% lower body weight gain, respectively, compared with controls. Females given 100 mg/kg bw per day had a 29% lower body weight gain compared with controls, but body weight gain in 300 mg/kg bw per day females was comparable with that of controls. These minimal/inconsistent alterations in body weight were considered not to be adverse. All dose levels had food consumption comparable with their respective controls throughout the study. Dose-related decreases in plasma, red blood cells, and brain and heart cholinesterase activities occurred in males and females at all dose levels. These decreases were statistically significant at each dose level, with the exception of brain cholinesterase of males given 10 mg/kg bw per day. There was evidence of recovery, almost complete for heart cholinesterase activity. There were no notable effects on hematology, clinical chemistry or urinalysis parameters. Increased adrenal weight (20-40%) and vacuolation of the adrenal cortex were evident at necropsy in both sexes dosed at 300 mg/kg bw per day and in males dosed at 100 mg/kg bw per day. Increased vacuolation of the adrenal zona fasciculata and reticulata was seen in all animals at all dose levels, but not in controls; at 10 mg/kg bw per day, the grading was very slight, in mid-dose males, it was slight, and in mid-dose females and all top-dose animals, it was graded moderate. In recovery phase animals, the grading had reduced to very slight. Taking account of the reversibility and severity, the adrenal findings at the low dose level are not considered to be adverse. The NOAEL was 10 mg/kg bw per day, based on marked inhibition of heart

cholinesterase activity and vacuolation of the adrenals at 100 mg/kg bw per day; the magnitude of these effects at 10 mg/kg bw per day is not considered adverse. There was no NOAEL for local effects.
- Respiratory or skin sensitization: /LABORATORY ANIMALS: Acute Exposure/ Chlorpyrifos-methyl was a slight transient irritant to rabbit skin and eyes. In a guinea-pig skin sensitization study using a Buehler protocol, chlorpyrifos-methyl was not a skin sensitizer, but positive results were seen when a Magnusson & Kligman maximization protocol was used.
- Germ cell mutagenicity: No data available.
- Carcinogenicity: IDENTIFICATION: Chlorpyrifos-methyl is an organophosphate pesticide used to control insects on fruits, vegetables and cereal plants. It is used to control insects in grain storage areas. This pesticide is a granular crystalline solid with a mercaptan odor. It is soluble in acetone, acetonitrile, benzene, carbon disulfide, carbon tetrachloride, chloroform, diethyl ether, ethanol, methanol, n-octanol and hexane. It is insoluble in water. HUMAN EXPOSURE: Fourteen male volunteers were divided into two treatment groups of 5 men each and a control group of four men. Chlorpyrifos-methyl was administered by gelatin capsule in a single daily dose for four weeks. Plasma and erythrocyte cholinesterase activities were not depressed at the levels tested. Hematology, blood chemistry, urinalysis, blood pressure, pulse and ophthalmology were not affected by the treatment. ANIMAL STUDIES/BIRDS: This pesticide was administered to groups of Sprague-Dawley CD strain rats in the diet for 104 weeks. There was no compound related effect on the incidence of spontaneous tumors. Chlorpyrifos-methyl administered orally to mice from day 7 through day 13 of gestation. Animals were sacrificed on day 18 and pups were removed by caesarean section. No significant difference was observed between control and treated groups concerning the number of implants and number of deaths. Body weights were lower in both males at the highest dose level. An increased incidence of cleft palate and a delay of ossification of the cervicovertebral body were observed at the high dose. When pregnant mice were dosed with a single oral dose on the seventh or eleventh day of pregnancy, there was no effect on mortality or body weights of the fetuses. A skeletal abnormality was observed (exencephalia, cleft palate, liberation of bone fragments of the cervicovertebral arch). Undiluted chlorpyrifos-methyl applied directly to the conjunctival sac of rabbits caused signs of irritation, which subsided after 24-48 hr. No corneal injury was noted. No significant skin reaction occurred when undiluted pesticide was applied to shaved and abraded skin of rabbits for prolonged periods. Chlorpyrifos-methyl was administered to rats in a three generation (two litters per generation) reproduction study. The pesticide was dosed orally. No treatment related effects were noted on behavior, survival and body weight gain or food consumption oberved in parental animals. Pup weights of the second litter, third generation were significantly less than control. There was no effect on sex ratio. In adults of the third generation, plasma cholinesterase activity decreased in both sexes at different dose levels. Mallard ducks, Bobwhite quail, Japanese quail were fed various doses of this pesticide for five days and observed for a further three days showed body weight and food consumption reduced for the Bobwhite and Japanese quail and at higher dose for the Mallard duck. Whole blood cholinesterase was inhibited. When 2,6-(14)C ring labeled chlorpyrifos-methyl was administered as a single dose to rats, radioactivity was readily absorbed and excreted. After 72 hr, 90-93% of the radioactivity was eliminated from the body. Urinary metabolites included 3,5,6-trichloro-2-pyridinol and unidentified activity at the origin by thin layer chromatography.
- Reproductive toxicity: IDENTIFICATION: Chlorpyrifos-methyl is an organophosphate pesticide used to control insects on fruits, vegetables and cereal plants. It is used to control insects in grain storage areas. This pesticide is a granular crystalline solid with a mercaptan odor. It is soluble in acetone, acetonitrile, benzene, carbon disulfide, carbon tetrachloride, chloroform, diethyl ether, ethanol, methanol, n-octanol and hexane. It is insoluble in water. HUMAN EXPOSURE: Fourteen male volunteers were divided into two treatment groups of 5 men each and a control group of four men. Chlorpyrifos-methyl was administered by gelatin capsule in a single daily dose for four weeks. Plasma and erythrocyte cholinesterase activities were not depressed at the levels tested. Hematology, blood chemistry, urinalysis, blood pressure, pulse and ophthalmology were not affected by the treatment. ANIMAL STUDIES/BIRDS: This pesticide was administered to groups of Sprague-Dawley CD strain rats in the diet for 104

weeks. There was no compound related effect on the incidence of spontaneous tumors. Chlorpyrifos-methyl administered orally to mice from day 7 through day 13 of gestation. Animals were sacrificed on day 18 and pups were removed by caesarean section. No significant difference was observed between control and treated groups concerning the number of implants and number of deaths. Body weights were lower in both males at the highest dose level. An increased incidence of cleft palate and a delay of ossification of the cervicovertebral body were observed at the high dose. When pregnant mice were dosed with a single oral dose on the seventh or eleventh day of pregnancy, there was no effect on mortality or body weights of the fetuses. A skeletal abnormality was observed (exencephalia, cleft palate, liberation of bone fragments of the cervicovertebral arch). Undiluted chlorpyrifos-methyl applied directly to the conjunctival sac of rabbits caused signs of irritation, which subsided after 24-48 hr. No corneal injury was noted. No significant skin reaction occurred when undiluted pesticide was applied to shaved and abraded skin of rabbits for prolonged periods. Chlorpyrifos-methyl was administered to rats in a three generation (two litters per generation) reproduction study. The pesticide was dosed orally. No treatment related effects were noted on behavior, survival and body weight gain or food consumption oberved in parental animals. Pup weights of the second litter, third generation were significantly less than control. There was no effect on sex ratio. In adults of the third generation, plasma cholinesterase activity decreased in both sexes at different dose levels. Mallard ducks, Bobwhite quail, Japanese quail were fed various doses of this pesticide for five days and observed for a further three days showed body weight and food consumption reduced for the Bobwhite and Japanese quail and at higher dose for the Mallard duck. Whole blood cholinesterase was inhibited. When 2,6-(14)C ring labeled chlorpyrifos-methyl was administered as a single dose to rats, radioactivity was readily absorbed and excreted. After 72 hr, 90-93% of the radioactivity was eliminated from the body. Urinary metabolites included 3,5,6-trichloro-2-pyridinol and unidentified activity at the origin by thin layer chromatography. Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. Accumulation of ACh at motor nerves causes overstimulation of nicotinic expression at the neuromuscular junction. When this occurs symptoms such as muscle weakness, fatigue, muscle cramps, fasciculation, and paralysis can be seen. When there is an accumulation of ACh at autonomic ganglia this causes overstimulation of nicotinic expression in the sympathetic system. Symptoms associated with this are hypertension, and hypoglycemia. Overstimulation of nicotinic acetylcholine receptors in the central nervous system, due to accumulation of ACh, results in anxiety, headache, convulsions, ataxia, depression of respiration and circulation, tremor, general weakness, and potentially coma. When there is expression of muscarinic overstimulation due to excess acetylcholine at muscarinic acetylcholine receptors symptoms of visual disturbances, tightness in chest, wheezing due to bronchoconstriction, increased bronchial secretions, increased salivation, lacrimation, sweating, peristalsis, and urination can occur. Certain reproductive effects in fertility, growth, and development for males and females have been linked specifically to organophosphate pesticide exposure. Most of the research on reproductive effects has been conducted on farmers working with pesticides and insecticdes in rural areas. In females menstrual cycle disturbances, longer pregnancies, spontaneous abortions, stillbirths, and some developmental effects in offspring have been linked to organophosphate pesticide exposure. Prenatal exposure has been linked to impaired fetal growth and development. Neurotoxic effects have also been linked to poisoning with OP pesticides causing four neurotoxic effects in humans: cholinergic syndrome, intermediate syndrome, organophosphate-induced delayed polyneuropathy (OPIDP), and chronic organophosphate-induced neuropsychiatric disorder (COPIND). These syndromes result after acute and chronic exposure to OP pesticides.

- STOT-single exposure: No data available.
- STOT-repeated exposure: Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. Accumulation of ACh at motor nerves causes overstimulation of nicotinic expression at the neuromuscular junction. When this occurs

symptoms such as muscle weakness, fatigue, muscle cramps, fasciculation, and paralysis can be seen. When there is an accumulation of ACh at autonomic ganglia this causes overstimulation of nicotinic expression in the sympathetic system. Symptoms associated with this are hypertension, and hypoglycemia. Overstimulation of nicotinic acetylcholine receptors in the central nervous system, due to accumulation of ACh, results in anxiety, headache, convulsions, ataxia, depression of respiration and circulation, tremor, general weakness, and potentially coma. When there is expression of muscarinic overstimulation due to excess acetylcholine at muscarinic acetylcholine receptors symptoms of visual disturbances, tightness in chest, wheezing due to bronchoconstriction, increased bronchial secretions, increased salivation, lacrimation, sweating, peristalsis, and urination can occur. Certain reproductive effects in fertility, growth, and development for males and females have been linked specifically to organophosphate pesticide exposure. Most of the research on reproductive effects has been conducted on farmers working with pesticides and insecticdes in rural areas. In females menstrual cycle disturbances, longer pregnancies, spontaneous abortions, stillbirths, and some developmental effects in offspring have been linked to organophosphate pesticide exposure. Prenatal exposure has been linked to impaired fetal growth and development. Neurotoxic effects have also been linked to poisoning with OP pesticides causing four neurotoxic effects in humans: cholinergic syndrome, intermediate syndrome, organophosphate-induced delayed polyneuropathy (OPIDP), and chronic organophosphate-induced neuropsychiatric disorder (COPIND). These syndromes result after acute and chronic exposure to OP pesticides. /LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ Groups of Fischer 344 rats (10 of each sex) were exposed nose only to Reldan F (purity 96.8%) at levels of 0, 0.49, 3.7 or 18 parts per billion (ppb) for 6 h/day, 5 days/week, for 2 weeks. The atmosphere was generated by passing air over molten (approximately 50 °C) Reldan F; the mass median aerodynamic diameter was 0.68 um. Five rats of each sex per group were terminated after 2 weeks; the remainder formed a 2-week recovery group. Clinical observations, body weights, food consumption and gross pathology were evaluated for all animals. In addition, hematology, clinical chemistry, urinalysis, organ weights and an extensive histopathological examination of tissues were evaluated in the exposure group rats only. There were no clinical signs other than those associated with confinement in nose-only exposure chambers. There were no notable effects on any measured parameter, including cholinesterase activities. The no-observed-adverse-effect concentration (NOAEC) is 18 ppb (approximately 100 ug/cu m, equivalent to 0.027 mg/kg bw per day).
- Aspiration hazard: No data available.

Likely routes of exposure
- No data available.

Symptoms related to the physical, chemical and toxicological characteristics
- IDENTIFICATION: Chlorpyrifos-methyl is an organophosphate pesticide used to control insects on fruits, vegetables and cereal plants. It is used to control insects in grain storage areas. This pesticide is a granular crystalline solid with a mercaptan odor. It is soluble in acetone, acetonitrile, benzene, carbon disulfide, carbon tetrachloride, chloroform, diethyl ether, ethanol, methanol, n-octanol and hexane. It is insoluble in water. HUMAN EXPOSURE: Fourteen male volunteers were divided into two treatment groups of 5 men each and a control group of four men. Chlorpyrifos-methyl was administered by gelatin capsule in a single daily dose for four weeks. Plasma and erythrocyte cholinesterase activities were not depressed at the levels tested. Hematology, blood chemistry, urinalysis, blood pressure, pulse and ophthalmology were not affected by the treatment. ANIMAL STUDIES/BIRDS: This pesticide was administered to groups of Sprague-Dawley CD strain rats in the diet for 104 weeks. There was no compound related effect on the incidence of spontaneous tumors. Chlorpyrifos-methyl administered orally to mice from day 7 through day 13 of gestation. Animals were sacrificed on day 18 and pups were removed by caesarean section. No significant difference was observed between control and treated groups concerning the number of implants and number of deaths. Body weights were lower in both males at the highest dose level. An increased incidence of cleft palate and a delay of ossification of the cervicovertebral body were observed at the high dose.

When pregnant mice were dosed with a single oral dose on the seventh or eleventh day of pregnancy, there was no effect on mortality or body weights of the fetuses. A skeletal abnormality was observed (exencephalia, cleft palate, liberation of bone fragments of the cervicovertebral arch). Undiluted chlorpyrifos-methyl applied directly to the conjunctival sac of rabbits caused signs of irritation, which subsided after 24-48 hr. No corneal injury was noted. No significant skin reaction occurred when undiluted pesticide was applied to shaved and abraded skin of rabbits for prolonged periods. Chlorpyrifos-methyl was administered to rats in a three generation (two litters per generation) reproduction study. The pesticide was dosed orally. No treatment related effects were noted on behavior, survival and body weight gain or food consumption oberved in parental animals. Pup weights of the second litter, third generation were significantly less than control. There was no effect on sex ratio. In adults of the third generation, plasma cholinesterase activity decreased in both sexes at different dose levels. Mallard ducks, Bobwhite quail, Japanese quail were fed various doses of this pesticide for five days and observed for a further three days showed body weight and food consumption reduced for the Bobwhite and Japanese quail and at higher dose for the Mallard duck. Whole blood cholinesterase was inhibited. When 2,6-(14)C ring labeled chlorpyrifos-methyl was administered as a single dose to rats, radioactivity was readily absorbed and excreted. After 72 hr, 90-93% of the radioactivity was eliminated from the body. Urinary metabolites included 3,5,6-trichloro-2-pyridinol and unidentified activity at the origin by thin layer chromatography.

SECTION 12: Ecological information

SECTION 12: Ecological information

12.1 Toxicity
- No data available.

12.2 Persistence and degradability
- No data available.

12.3 Bioaccumulative potential
- No data available.

12.4 Mobility in soil
- No data available.

12.5 Results of PBT and vPvB assessment
- Not available.

12.6 Endocrine disrupting properties
- Not available.

12.7 Other adverse effects
- Not available.

SECTION 13: Disposal considerations

SECTION 13: Disposal considerations

13.1 Waste treatment methods
- Dispose of contents/container in accordance with local/regional/national/international regulations.
- Do not discharge to drains or the environment.
- Contaminated packaging: Dispose of as unused product unless cleaned according to applicable regulations.

- Waste codes: Not available.

SECTION 14: Transport information

SECTION 14: Transport information

- UN number: Not available.
- UN proper shipping name: Not available.
- Transport hazard class(es): Not available.
- Packing group: Not available.
- Environmental hazards: Not available.
- Special precautions for user: Not available.
- Transport in bulk according to IMO instruments: Not available.

SECTION 15: Regulatory information

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Not available.

15.2 Chemical safety assessment
- Not available.

SECTION 16: Other information

SECTION 16: Other information

- Product name: Chlorpyriphos-methyl
- CAS No.: 5598-13-0
- Synonyms: O,O-dimethyl O-(3,5,6-trichloropyridin-2-yl) phosphorothioate
- Catalog No.: CS-T-12787
- Supplier: Clearsynth Labs Ltd., Mumbai, India
- Emergency phone: +91-22-245045900

Disclaimer
- The information provided is believed to be accurate based on available product identification details; however, no warranty is expressed or implied. Users are responsible for determining suitability and for complying with applicable laws and regulations.
- Revision date: Not available.

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