

SAFETY DATA SHEET
Cygon 480

SDS # : FO002049-A
Revision date: 2018-12-20
Format: NA
Version 1.05



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Cygon 480

Other means of identification

Product Code(s) FO002049-A

Synonyms DIMETHOATE: O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] phosphorodithioate (CAS name); 2-dimethoxyphosphinothioylthio-N-methylacetamide (IUPAC name)

Active Ingredient(s) Dimethoate

Chemical Family Organophosphate

Alternate Commercial Name Cygon 480-AG, Cygon 480-ORN
PCP # 8277, 25651, 25650

Recommended use of the chemical and restrictions on use

Recommended Use: Insecticide

Restrictions on Use: Use as recommended by the label.

Supplier Address

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
(215) 299-6000 (General Information)
msdsinfo@fmc.com (E-Mail General Information)

Emergency telephone number

For leak, fire, spill or accident emergencies, call:
1 800 / 424-9300 (CHEMTREC - U.S.A.)
1 703 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)

Medical Emergencies:
1 800 / 331-3148 (U.S.A. & Canada)
1 651 / 632-6793 (All Other Countries - Collect)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4


Serious eye damage/eye irritation	Category 2A
Flammable liquids	Category 3

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Warning

Hazard Statements
 H302 - Harmful if swallowed
 H332 - Harmful if inhaled
 H319 - Causes serious eye irritation
 H226 - Flammable liquid and vapor
 H401 - Toxic to aquatic life
 H411 - Toxic to aquatic life with long lasting effects



Precautionary Statements - Prevention

- P264 - Wash hands thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
- P271 - Use only outdoors or in a well-ventilated area
- P280 - Wear eye protection/ face protection
- P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking
- P233 - Keep container tightly closed
- P242 - Use only non-sparking tools
- P243 - Take precautionary measures against static discharge
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P273 - Avoid release to the environment

Precautionary Statements - Response

- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor
- P312 - Call a POISON CENTER or doctor if you feel unwell
- P332 + P313 - If skin irritation occurs: Get medical advice/attention
- P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
- P363 - Wash contaminated clothing before reuse
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P310 - Immediately call a POISON CENTER or doctor
- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
- P330 - Rinse mouth
- P391 - Collect spillage

Precautionary Statements - Storage

- P405 - Store locked up
- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

- P501 - Dispose of contents/container according to label directions

Hazards not otherwise classified (HNOC)

No hazards not otherwise classified were identified.

Other Information

Harmful to aquatic life.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Organophosphate.

Chemical name	CAS-No	Weight %
Dimethoate	60-51-5	30-60
Cyclohexanone	108-94-1	15-30

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

Eye Contact	Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Ingestion	Immediately call a poison control center or doctor Do not induce vomiting unless advised by a physician or qualified medical advisor. Do not give anything by mouth to an unconscious person. Transport to a clinic or hospital immediately
Most important symptoms and effects, both acute and delayed	<p>Inhalation: Dimethoate is a dangerous poison through inhalation. This material can cause organophosphorous poisoning. Symptoms of poisoning may include headache, nausea, vomiting, blurred vision, tightness in chest, drooling and frothing of mouth and nose, pulmonary edema (fluid accumulation), cyanosis (bluish discoloration of skin) convulsions, coma and death.</p> <p>Skin contact: Direct skin contact may cause moderate to severe irritation. Dimethoate can be rapidly absorbed through all skin surfaces and cause symptoms similar to those listed for inhalation.</p> <p>Eye contact: Direct eye contact may cause severe irritation. Dimethoate can be rapidly absorbed through all skin and eye surfaces and cause symptoms similar to those listed for inhalation.</p> <p>Ingestion: Dimethoate is a dangerous poison through ingestion. Causes symptoms similar to those listed for inhalation. This product may present an aspiration hazard. Aspiration into the lungs can cause life threateninglung injury.</p>
Indication of immediate medical attention and special treatment needed, if necessary	This product contains a cholinesterase inhibitor affecting the central and peripheral nervous systems and producing respiratory depression. Decontamination procedures such as whole body washing, gastric lavage and administration of activated charcoal are often required. If symptoms are present, administer atropine sulphate in large doses. Two to four mg intravenously or intramuscularly, as soon as possible. Repeat at 5 to 10 minute intervals until signs of atropinization appear. Maintain full atropinization until all organophosphate is metabolized. Obidoxime chloride (Toxogonin), alternatively pralidoxime chloride (2-PAM), may be administered as an adjunct to, but not a substitute for atropine, which is a symptomatic and often life-saving antidote. Treatment with oxime should be maintained as long as atropine sulphate is administered. At first sign of pulmonary edema, the patient should be given supplemental oxygen and treated symptomatically. Continued absorption may occur and relapse may occur after initial improvement. VERY CLOSE SUPERVISION OF THE PATIENT IS INDICATED FOR AT LEAST 48 HOURS, DEPENDING ON THE

SEVERITY OF POISONING.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Dry chemical, carbon dioxide, water spray or regular foam. Avoid heavy hose streams.
Specific Hazards Arising from the Chemical	Flammable liquid and vapor. This material will ignite when exposed to heat, sparks, flames, or other sources of ignition (e.g. static electricity, pilot lights, or mechanical/electrical equipment). Material may decompose rapidly when exposed to heat and flame. Heat of decomposition may cause closed containers to build up pressure and explode.
Hazardous Combustion Products	Nitrogen oxides (NOx), Carbon oxides; Oxides of phosphorus; oxides of sulfur; dimethyl sulfide; irritating fumes and smoke.
<u>Explosion data</u>	
Sensitivity to Mechanical Impact	Not sensitive.
Sensitivity to Static Discharge	Not expected to be sensitive to static discharge.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Dike to prevent runoff. Use water spray to cool fire exposed surfaces and protect personnel. Move containers from fire area if you can do it without risk.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
Other	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
Environmental Precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. Toxic to aquatic life.
Methods for Containment	Remove all sources of ignition. Ventilate area of release. Stop the spill at source if it is safe to do so. Contain and absorb spilled material with inert, non-combustible absorbent material, such as sand. Sweep up and shovel into suitable containers for disposal. For a water spill, confine the spill immediately with booms. Large spills that soak into the ground should be dug up, placed into suitable containers and disposed of appropriately (see Section 13). Notify the appropriate authorities as required.
Methods for cleaning up	Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Handling	This material is a toxic liquid. Wear chemically resistant protective equipment during handling. Use only in well-ventilated areas. Avoid contact with eyes, skin and clothing. Do not breathe vapors or spray mist. Keep away from children and all unprotected persons. Do not use near sources of heat, flame or direct sunlight. Dimethoate should never be heated above 35°C. Heat only indirectly and with solvent present. Local heating with, for example, electric heating equipment or steam, may significantly increase the risk of explosion and should never take place. Keep away from incompatibles. Use caution when opening cap. Keep containers tightly closed when not in use. Wash thoroughly after handling.
Storage	Store in a cool, dry area away from potential sources of heat, open flames, sunlight or other chemicals. Store at less than 25 °C, in tightly closed containers. Keep out of direct sunlight. Store in dry environment away from heat and sources of ignition, i.e., steam pipes, radiant heaters, hot air vents or welding sparks. Do not store with strong smelling materials. Containers should be visually inspected on a regular basis to detect any abnormalities (swollen drums, increases in temperature, etc.).
Incompatible products	Strong oxidizing agents, Alkalis, Amines

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Cyclohexanone (108-94-1)	STEL 50 ppm TWA: 20 ppm	TWA: 50 ppm TWA: 200 mg/m ³	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m ³	Mexico: TWA 50 ppm Mexico: TWA 200 mg/m ³ Mexico: STEL 100 ppm Mexico: STEL 400 mg/m ³
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Cyclohexanone (108-94-1)	TWA: 20 ppm STEL: 50 ppm Skin	TWA: 25 ppm TWA: 100 mg/m ³ Skin	TWA: 20 ppm STEL: 50 ppm Skin	TWA: 20 ppm TWA: 80 mg/m ³ STEL: 50 ppm STEL: 200 mg/m ³ Skin

Appropriate engineering controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Tightly fitting safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

Skin and Body Protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Hand Protection Impervious gloves

Respiratory Protection Respiratory protection is required. Use only with adequate ventilation. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Hygiene measures Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Must have clean water available for washing in case of eye or skin contamination. Wash skin before eating, drinking, chewing gum, or using snuff. Shower after work. Remove contaminated clothing and wash before reuse. Wash all work clothing separately; do not mix with household laundry. Persons working with this product for a longer period should have frequent blood tests for cholinesterase levels. If the cholinesterase levels fall below a critical point, no further exposure should be allowed until it has been determined, by means of blood tests, that cholinesterase levels have returned to normal.

General information If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance Liquid suspension
Physical State Liquid
Color Colorless, Light yellow
Odor Slight mercaptan
Odor threshold No information available
pH No information available
Melting point/freezing point < 5 °C / 41 °F
Boiling Point/Range Decomposes @176F (80C)
Flash point 42 °C / 108 °F : (PMCC)
Evaporation Rate No information available

Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available
Specific gravity	No information available
Water solubility	Emulsifies
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	5-10 cps @77F (25C)
Explosive properties	No information available
Oxidizing properties	No information available
Molecular weight	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity	Stable under recommended storage conditions
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	It is strongly advised to heat product indirectly. Above 176oF / 80oC Dimethoate will decompose rapidly, significantly increasing the risk of inducing explosions. The decomposition is to a considerable extent dependant on time as well as temperature due to exothermic and autocatalytic reactions. The reactions involve rearrangements and polymerization, releasing volatile malodorous and inflammable compounds such as dimethylsulfide and methyl mercaptan.
Conditions to avoid	Heat, flames and sparks Extremes of temperature and direct sunlight
Incompatible materials	Strong oxidizing agents, Alkalis, Amines.
Hazardous Decomposition Products	Dimethyl sulphide, methyl mercaptan.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral	450 mg/kg (rat) (Based on a similar product)
LD50 Dermal	> 2000 mg/kg (rat) (Based on a similar product)
LC50 Inhalation	2.5 mg/L 4 hr (Similar product)
Serious eye damage/eye irritation	No information available.
Skin corrosion/irritation	No information available.
Sensitization	None known

Information on toxicological effects

Symptoms	<p>Inhalation: Dimethoate is a dangerous poison through inhalation. This material can cause organophosphorous poisoning. Symptoms of poisoning may include headache, nausea, vomiting, blurred vision, tightness in chest, drooling and frothing of mouth and nose, pulmonary edema (fluid accumulation), cyanosis (bluish discoloration of skin) convulsions, coma and death.</p> <p>Skin contact: Direct skin contact may cause moderate to severe irritation. Dimethoate can be rapidly absorbed through all skin surfaces and cause symptoms similar to those listed for inhalation.</p> <p>Eye contact: Direct eye contact may cause severe irritation. Dimethoate can be rapidly</p>
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absorbed through all skin and eye surfaces and cause symptoms similar to those listed for inhalation.

Ingestion: Dimethoate is a dangerous poison through ingestion. Causes symptoms similar to those listed for inhalation. This product may present an aspiration hazard. Aspiration into the lungs can cause life threatening lung injury.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Mutagenicity Not expected to be mutagenic in humans
Carcinogenicity Not recognized as carcinogenic by Research Agencies (IARC, NTP, OSHA, ACGIH)
Reproductive toxicity Not expected to have reproductive effects.
Teratogenicity Not expected to be a teratogen.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Other Adverse Effects Repeated exposures to cholinesterase inhibitors, such as Dimethoate, may without warning cause increased susceptibility to doses of any cholinesterase inhibitor.
Aspiration hazard This product presents an aspiration pneumonia hazard.

Chemical name	ACGIH	IARC	NTP	OSHA
Cyclohexanone 108-94-1	A3	Group 3		

Legend:
 ACGIH (*American Conference of Governmental Industrial Hygienists*)
 A3 - *Animal Carcinogen*
 IARC (*International Agency for Research on Cancer*)
 Group 3 - *Not classifiable as to its carcinogenicity to humans*

12. ECOLOGICAL INFORMATION

Ecotoxicity

Persistence and degradability Non-persistent, Product is biodegradable.
Bioaccumulation Bioaccumulation is unlikely.
Mobility Relatively immobile in soil.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.
Contaminated Packaging Dispose of rinse water in accordance with local and national guidelines. Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

14. TRANSPORT INFORMATION

DOT

UN/ID no UN3229
Proper Shipping Name Self-reactive liquid, Type F
Hazard class 4.1
Packing Group Not applicable
Reportable Quantity (RQ) 10 lbs (Dimethoate); 5000 lbs. (Cyclohexanone)
Marine Pollutant Dimethoate.

Description UN3229, Self-reactive liquid, Type F (Dimethoate), 4.1, Marine Pollutant, RQ

TDG

UN/ID no UN3229
Proper Shipping Name Self-reactive liquid, Type F
Hazard class 4.1
Packing Group II
Marine Pollutant Dimethoate.
Description UN3229, Self-reactive liquid, Type F (Dimethoate), 4.1, PGII, Marine Pollutant, RQ

ICAO/IATA

UN/ID no UN3229
Proper Shipping Name Self-reactive liquid, Type F
Hazard class 4.1
Packing Group Not applicable
Special Provisions "Keep away from heat" hazard label required, Cargo Air Craft only max net qty/pkg: 25 L, Refer to Special Provision A20 and A802 prior to shipping
Description UN3229, Self-reactive liquid, Type F (Dimethoate), 4.1, Marine Pollutant, RQ

IMDG/IMO

UN/ID no UN3229
Proper Shipping Name Self-reactive liquid, Type F
Hazard class 4.1
Packing Group Not applicable
EmS No. F-J, S-G
Marine Pollutant Dimethoate
Description UN3229, Self-reactive liquid, Type F (Dimethoate), 4.1, Marine Pollutant, RQ

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Dimethoate - 60-51-5	60-51-5	30-60	1.0

SARA 311/312 Hazard Categories

Acute health hazard Yes
Chronic health hazard Yes
Fire hazard Yes
Sudden release of pressure hazard No
Reactive Hazard No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Acetic Anhydride 108-24-7	5000 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances

Cygon 480

SDS # : FO002049-A
 Revision date: 2018-12-20
 Version 1.05

		RQs
Acetic Anhydride 108-24-7	5000 lb 2270 kg	
Cyclohexanone 108-94-1	5000 lb 2270 kg	
Dimethoate 60-51-5	10 lb 4.54 kg	10 lb

FIFRA Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

WARNING

*May be fatal if swallowed.
 Causes moderate eye irritation.
 Avoid contact with eyes or clothing.*

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Dimethoate 60-51-5	X	X	X
Cyclohexanone 108-94-1	X	X	X

International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Dimethoate 60-51-5	X	X	X	X	X	X	X	X
Cyclohexanone 108-94-1	X	X	X	X	X	X	X	X

Chemical name	Carcinogen Status	Mexico
Cyclohexanone		Mexico: TWA 50 ppm Mexico: TWA 200 mg/m ³ Mexico: STEL 100 ppm Mexico: STEL 400 mg/m ³

CANADA**WHMIS Statement**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

This product is a Pest Control Product and is not regulated as a Controlled Product under the Hazardous Products Act (HPA). However, for reference purposes only, this product would have the following WHMIS Classification if it were regulated as a Controlled Product under the HPA:

WHMIS Hazard Class B3 - Combustible liquid
 D1B - Toxic materials
 D2B - Toxic materials
 F - Dangerously reactive material

16. OTHER INFORMATION

NFPA	Health Hazards 2	Flammability 2	Instability 1	Special Hazards -
HMIS	Health Hazards 2*	Flammability 2	Physical hazard 1	Personal Protection X

**Indicates a chronic health hazard.*

NFPA/HMIS Ratings Legend Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision date: 2018-12-20
Reason for revision: SDS sections updated

Disclaimer

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Prepared By:

FMC Corporation

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End of Safety Data Sheet