



SAFETY DATA SHEET

1. Identification

Product identifier FF III Fungicide

Other means of identification

SDS number 548

Product registration number 5481-614

Recommended use Fungicide.

Recommended restrictions No other uses are advised.
Keep out of the Reach of Children!

EPA Registration number EPA: 5481-614

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name AMVAC Chemical Corporation

Address 4685 MacArthur Court
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Newport Beach, CA 92660

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AMVAC Chemical Corp 949-260-6270(FAX)

Website www.Amvac-Chemical.com

E-mail CustServ@Amvac-Chemical.com

Emergency phone number Medical 888-681-4261
CHEMTREC® 800-424-9300
(USA+Canada)
Product Use 888-462-6822
CHEMTREC® (Outside +1-703-527-3887
USA)

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Acute toxicity, oral Category 4
Serious eye damage/eye irritation Category 2B
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Harmful if swallowed.
Causes mild skin irritation.
Causes eye irritation.
Transient Respiratory Irritation Possible

Precautionary statement

Prevention Keep out of reach of children.
Read label before use.
Do not eat, drink or smoke when using this product.
Avoid breathing mist.
Use only outdoors or in a well-ventilated area.
Wash hands thoroughly after handling.

Response	Call a POISON CENTER or doctor/physician if you feel unwell. If medical advice is needed, have product container or label at hand. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
Storage	Store in original container. Keep container tightly closed.
Disposal	Dispose of contents/container in accordance with all applicable local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	This is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced in section 15. The pesticide label also includes other important information, including directions for use.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Pentachloronitrobenzene	PCNB; Quintozene	82-68-8	7.5
Chlorothalonil	2,4,5,6-Tetrachloro-1,3-benzenedicarboni trile	1897-45-6	3.9
Propiconazole	1-[[2-(2,4-Dichlorophenyl)-4-propyl-1,3-di oxolan-2-yl]methyl]-1,2,4-triazole	60207-90-1	0.62

Impurities

Chemical name	Common name and synonyms	CAS number	%
Hexachlorobenzene	HCB	118-74-1	< 20 ppm

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Not available.
Eye contact	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if irritation develops and persists.
Ingestion	If victim is alert and not convulsing, give one glass of water to dilute material, but DO NOT induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions. Call a physician or poison control center immediately. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Not available.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	Not available.
Specific hazards arising from the chemical	Not applicable.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Not available.

Methods and materials for containment and cleaning up If uncontaminated, sweep up or collect, and reuse as product. If contaminated, shovel, sweep up or vacuum up spillage and collect in suitable container for disposal. Clean surface thoroughly to remove residual contamination. Dispose of cleanup materials as hazardous waste (See Section 13).

Environmental precautions Avoid discharge into drains, sewers, water courses or low areas.

7. Handling and storage

Precautions for safe handling No special precautions are necessary beyond normal good hygiene practices. See Section 8 of the SDS for additional personal protection advice when handling this product.

Conditions for safe storage, including any incompatibilities Store in cool, dry place. Store in a well-ventilated place. Do not expose to heat or store at temperatures above 120°F/49°C.

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Additional components	Type	Value	Form
free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	PEL	0.05 mg/m ³	Respirable dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Additional components	Type	Value	Form
Nuisance Dust	TWA	5 mg/m ³ 15 mg/m ³	Respirable fraction. Total dust.
free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	TWA	0.1 mg/m ³	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value
Pentachloronitrobenzene (CAS 82-68-8)	TWA	0.5 mg/m ³

Additional components	Type	Value	Form
free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.

Impurities	Type	Value
Hexachlorobenzene (CAS 118-74-1)	TWA	0.002 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Additional components	Type	Value	Form
free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	TWA	0.05 mg/m ³	Respirable dust.

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US - California OELs: Skin designation

Hexachlorobenzene (CAS 118-74-1) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Hexachlorobenzene (CAS 118-74-1) Skin designation applies.

US ACGIH Threshold Limit Values: Skin designation

Hexachlorobenzene (CAS 118-74-1) Can be absorbed through the skin.

Appropriate engineering controls	Local exhaust ventilation is recommended.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Safety glasses with side shields, goggles, or faceshield are recommended.
Skin protection	
Hand protection	Chemical resistant gloves. Nitrile or butyl rubber gloves are recommended.
Other	Long-sleeved shirt and long pants or coveralls, socks and closed toe shoes are required.
Respiratory protection	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
Thermal hazards	Not available.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Granular.
Color	Multi-colored
Odor	Slight.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not flammable
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.

Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.

Solubility(ies)

Solubility (water)	Partially soluble
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Auto-ignition temperature	Not available.
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Decomposition temperature	Not available.
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Viscosity	Not available.
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10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
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Chemical stability	Stable at normal conditions and storage conditions.
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Possibility of hazardous reactions	Not available.
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Conditions to avoid	Excessive heat (>200°F).
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Incompatible materials	Strong bases. Oxidizing agents.
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Hazardous decomposition products	Emits hazardous fumes and smoke of unknown composition when heated to decomposition or burned.
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11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system.
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Skin contact Causes slight skin irritation. May cause an allergic skin reaction.

Eye contact Causes eye irritation.

Ingestion May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics A person suffering from acute exposure to PCNB may exhibit vomiting, hyperirritability, convulsions, conversion of hemoglobin to methemoglobin. Technical Grade PCNB is a slight skin and eye irritant and may lead to contact dermatitis. Toxicology testing has shown PCNB is a skin sensitizer.

Information on toxicological effects

Acute toxicity May be harmful if swallowed. Causes slight skin irritation. Causes eye irritation. May cause respiratory irritation. May cause an allergic skin reaction.

Components	Species	Test Results
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Chlorothalonil (CAS 1897-45-6)

Acute

Dermal

LD50 Rat > 2500 mg/kg

Oral

LD50 Rat 10 mg/kg

Pentachloronitrobenzene (CAS 82-68-8)

Acute

Dermal

LD50 Rabbit > 2020 mg/kg

Inhalation

LC50 Rat > 6.49 mg/l (as an aerosol)

Oral

LD50 Rat > 5050 mg/kg

Propiconazole (CAS 60207-90-1)

Acute

Inhalation

LC50 Rat > 5.8 mg/l, 4 Hours

Skin corrosion/irritation Causes slight skin irritation.

Serious eye damage/eye irritation Causes eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization Not available.

Germ cell mutagenicity Not available.

Carcinogenicity

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen. However, product may contain trace amounts of crystalline silica/quartz and wood dust, which are listed by IARC as potential human carcinogens. Studies on laboratory animals have suggested that chlorothalonil may have oncogenic potential. PCNB is an experimental animal carcinogen and a possible human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Chlorothalonil (CAS 1897-45-6) 2B Possibly carcinogenic to humans.

free respirable Crystalline (quartz) Silica (CAS 14808-60-7) 1 Carcinogenic to humans.

Hexachlorobenzene (CAS 118-74-1) 2B Possibly carcinogenic to humans.

Pentachloronitrobenzene (CAS 82-68-8) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

free respirable Crystalline (quartz) Silica (CAS 14808-60-7) Cancer

US. National Toxicology Program (NTP) Report on Carcinogens

free respirable Crystalline (quartz) Silica (CAS 14808-60-7) Known To Be Human Carcinogen.

Hexachlorobenzene (CAS 118-74-1) Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity	Not available.
Specific target organ toxicity - single exposure	Not available.
Specific target organ toxicity - repeated exposure	Not available.
Aspiration hazard	Not available.

12. Ecological information

Ecotoxicity

Components	Species	Test Results
Chlorothalonil (CAS 1897-45-6)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna)
		0.081 - 0.113 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)
		0.0136 mg/l, 96 hours
Pentachloronitrobenzene (CAS 82-68-8)		
Aquatic		
Crustacea	LC50	Water flea (Daphnia)
		0.77 mg/l, 48 hours
Fish	LC50	Bluegill (Lepomis macrochirus)
		0.1 mg/l, 96 hours
		Rainbow trout,donaldson trout (Oncorhynchus mykiss)
		0.55 mg/l, 96 hours
Propiconazole (CAS 60207-90-1)		
Aquatic		
Fish	LC50	Brown trout (Salmo trutta)
		1.2 mg/l, 96 hours
		1.2 mg/l, 96 hours

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Pentachloronitrobenzene	5
Propiconazole	3.5

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site according to all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of container and residues in accordance with all applicable regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal according to all applicable regulations.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

HAZARD TO HUMANS AND DOMESTIC ANIMALS.

CAUTION! Causes moderate eye irritation. Harmful if absorbed through skin. Avoid inhalation of dust. Avoid contact with eyes, skin, or clothing. Wash hands after handling and before eating, drinking, chewing gum or using tobacco. Remove and wash contaminated clothing before reuse. Wear protective eyewear. When mixing or loading or applying this product to turf via tractor-drawn spreader, wear a dust mask. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish, aquatic organisms, aquatic invertebrates and wildlife. Cover, collect, or incorporate spilled granules. Do not apply directly adjacent to potable water supplies. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Hexachlorobenzene (CAS 118-74-1) Listed.
Pentachloronitrobenzene (CAS 82-68-8) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

free respirable Crystalline (quartz) Silica (CAS 14808-60-7) Cancer
lung effects
immune system effects
kidney effects

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Classified hazard categories Yes
Acute toxicity (any route of exposure)
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Chlorothalonil	1897-45-6	3.9
Pentachloronitrobenzene	82-68-8	7.5

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Hexachlorobenzene (CAS 118-74-1)
Pentachloronitrobenzene (CAS 82-68-8)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

California Proposition 65



WARNING: This product can expose you to chemicals including Hexachlorobenzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Chlorothalonil (CAS 1897-45-6) Listed: January 1, 1989
free respirable Crystalline (quartz) Silica (CAS 14808-60-7) Listed: October 1, 1988

Hexachlorobenzene (CAS 118-74-1) Listed: October 1, 1987

California Proposition 65 - CRT: Listed date/Developmental toxin

Hexachlorobenzene (CAS 118-74-1) Listed: January 1, 1989

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Chlorothalonil (CAS 1897-45-6)
free respirable Crystalline (quartz) Silica (CAS 14808-60-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	Jun-13-2017
Revision date	Aug-30-2018
Version #	2.0
HMIS® ratings	Health: 1 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 0 Instability: 0

Disclaimer

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Revision information

Hazard(s) identification: Supplemental information
Composition / Information on Ingredients: Disclosure Overrides
Regulatory information: California Proposition 65
Regulatory information: Water Pollution Control Act
Other information, including date of preparation or last revision: Disclaimer