SAFETY DATA SHEET

1. Identification

Product identifier	**DACTHAL® FLOWABLE HERBICIDE**
Other means of identification	
SDS number	298
Product registration number	5481-487
Recommended use	Herbicide.
Recommended restrictions	No other uses are advised. Keep out of the Reach of Children!
EPA Registration number	EPA: 5481-487

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	AMVAC Chemical Corporation	
Address	4695 MacArthur Court Suite 1200 Newport Beach, CA 92660	
Telephone	AMVAC Chemical Corp	949-260-1200
	AMVAC Chemical Corp	949-260-6270(FAX)
Website	www.amvac.com	
E-mail	CustServ@amvac.com	
Emergency phone number	Medical	888-681-4261
	CHEMTREC® (USA+Canada)	800-424-9300
	Product Use	888-462-6822
	CHEMTREC® (Outside USA)	+1-703-527-3887

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Acute toxicity, inhalation	Category 4
	Serious eye damage/eye irritation	Category 2B
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
OSHA defined hazards	Not classified.	

Label elements

Signal word	Warning
Hazard statement	Harmful if inhaled. Causes eye irritation. Harmful to aquatic life.

Precautionary statement

Prevention	Avoid breathing dust/fume. Wear eye/face protection. Wash hands thoroughly after handling. Avoid release to the environment.

Response	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. 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.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with 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	%
Chlorthal-dimethyl	2,3,5,6-Tetrachloro-1,4-benzenedicarboxylic acid, Dimethyl ester DCPA DACTHAL	1861-32-1	54.9
Hi Sil 233		112926-00-8	0.75

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Provide oxygen or artificial respiration if needed, preferably mouth to mouth if possible. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention if symptoms occur.
Skin contact	Take off contaminated clothing and wash before reuse. Rinse with water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water about 15-20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Do not induce vomiting without advice from poison control center. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Causes eye irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Hydrogen chloride, carbon oxides and unidentified organic compounds may be formed when it is heated excessively or burned.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In the event of fire, cool tanks with water spray. Water runoff can cause environmental damage.
Specific methods	In the event of fire and/or explosion do not breathe fumes. Cool containers exposed to flames with water until well after the fire is out.

General fire hazards No unusual fire or explosion hazards noted. This is a noncombustible solid that will burn or decompose when kept directly in the flame (NFPA rating = 1).

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS/SDS.

Methods and materials for containment and cleaning up Stop the flow of material, if this is without risk, to prevent entry into waterways, sewer, basements or confined areas. Collect spillage. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Environmental precautions Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Keep out of the reach of children. Minimize dust generation and accumulation. Avoid contact with eyes. Avoid breathing dust. Wear appropriate personal protective equipment recommended in section 8. Wash thoroughly after handling. Observe good industrial hygiene practices. Do not empty into drains. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities Keep out of the reach of children. Keep container tightly closed. Store in a cool, dry place out of direct sunlight.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
Hi Sil 233 (CAS 112926-00-8)	TWA	0.8 mg/m3
		20 mppcf

US. ACGIH Threshold Limit Values

Additional components	Type	Value
Hexachlorobenzene (CAS 118-74-1)	TWA	0.002 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Hi Sil 233 (CAS 112926-00-8)	TWA	6 mg/m3

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value	Form
TRADE SECRET	TWA	10 mg/m3	Aerosol.

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

Exposure guidelines Dust exposure limit.

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 Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection	
Hand protection	Wear chemical resistant gloves (preferably nitrile).
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.
Thermal hazards	Not applicable.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Gray opaque viscous liquid suspension
Physical state	Liquid.
Form	Liquid suspension.
Color	Gray opaque
Odor	Slightly aromatic odor
Odor threshold	Not available
pH	6.5 - 8.5
Melting point/freezing point	23 °F (-5 °C)
Initial boiling point and boiling range	> 212 °F (> 100 °C)
Flash point	Not available.
Evaporation rate	Not determined
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	2.10E-01 mPa (2.5 x 10-6 torr) @ 25°C (gas saturation method)
Vapor density	Heavier than air
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Disperses
Solubility (solvents)	The active ingredient in this product is soluble in aromatic hydrocarbons, chlorinated hydrocarbons, ketones, and esters.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Bulk density	11 lb/gal @ 20°C
Percent volatile	38.37 % estimated
Specific gravity	1.32 @ 20C

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions. It will decompose at elevated temperatures (360-370°C).
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Strong acids. Strong bases. Strong acids and bases will decompose the ester functions of DACTHAL®.

Hazardous decomposition products This product may emit hazardous fumes of hydrogen chloride, carbon oxides, and unidentified organic compounds when it is heated excessively or burned. WEAR SELF-CONTAINED BREATHING APPARATUS when these conditions are present. It will decompose at elevated temperatures (360-370°C).

11. Toxicological information

Information on likely routes of exposure

Inhalation Harmful if inhaled.

Skin contact Slight skin irritant.

Eye contact Causes mild eye irritation.

Ingestion Expected to be a low ingestion hazard.

Symptoms related to the physical, chemical and toxicological characteristics Irritation of eyes. Exposure may cause temporary irritation, redness, or discomfort.

Information on toxicological effects

Acute toxicity

Product	Species	Test Results
Dacthal Flowable		
acute		
dermal		
LD50	Rabbit	> 5000 mg/kg
oral		
LD50	Rat	> 5000 mg/kg

Skin corrosion/irritation May be irritating to the skin.

Serious eye damage/eye irritation Slight irritant.

Respiratory or skin sensitization

Respiratory sensitization Not available.

Skin sensitization Not sensitizing.

Germ cell mutagenicity No evidence of mutagenicity has been observed in animal testing.

Carcinogenicity None of the components present in this material at concentrations equal to or greater than 0.l% are listed by IARC, NTP, or OSHA, as a carcinogen. Chlorthal-Dimethyl has been classified by EPA as a Group C, possible human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Hexachlorobenzene (CAS 118-74-1)	2B Possibly carcinogenic to humans.
Hi Sil 233 (CAS 112926-00-8)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

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

Reproductive toxicity No effects on reproductive performance, only decreased pup and parental body weights, were seen throughout two successive generations in the rat when treated with Dacthal Technical.

Specific target organ toxicity - single exposure Not available.

Specific target organ toxicity - repeated exposure Not available.

Aspiration hazard Not an aspiration hazard.

12. Ecological information

Ecotoxicity

Components		Species	Test Results
Chlorthal-dimethyl (CAS 1861-32-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	20 - 35 mg/l, 48 hours

Components		Species	Test Results
Fish	LC50	Bluegill (Lepomis macrochirus)	> 100 mg/l, 96 hours

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Chlorthal-dimethyl 4.28

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. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with all applicable local/regional/national/international 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 in accordance with all applicable regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal methods/information).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal according to all applicable regulations. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.

IMDG

Not regulated as dangerous goods.

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

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.

HAZARD TO HUMANS AND DOMESTIC ANIMALS.

CAUTION! Causes moderate eye irritation. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling.

ENVIRONMENTAL HAZARDS

Do not apply directly to water, or to areas where surface water is present (except for application to cranberry bogs) or to intertidal areas below the mean high water mark. Do not allow this material to drift onto neighboring crops or non crop areas or use in a manner or at a time other than in accordance with label directions because animal, plant or crop injury, illegal residues, or other undesirable results may occur.

Toxic Substances Control Act (TSCA)

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.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Acute toxicity (any route of exposure)
Serious eye damage or eye irritation

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Hexachlorobenzene	118-74-1	<10 ppm

Other federal regulations

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

Hexachlorobenzene (CAS 118-74-1)

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 Hexachlorobenzene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

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

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	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 May-11-2015

Revision date Jul-27-2020

References

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
ACGIH®: American Conference of Governmental Industrial Hygienists
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
EPA: Environmental Protection Agency
FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Agency
SARA: Superfund Amendments and Reauthorization Act
TSCA: Toxic Substances Control Act
DOT: Department of Transportation
IMDG: International Maritime Dangerous Goods
IATA: International Air Transport Association

Version #

2.0

Further information

Dacthal is a registered Trademark of Amvac Chemical Corporation.

HMIS® ratings

Health: 2
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 2
Flammability: 0
Instability: 0

Disclaimer

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Revision information

This document has undergone significant changes and should be reviewed in its entirety.