



# SAFETY DATA SHEET

## 1. Identification

<b>Product identifier</b>	<b>DACTHAL® FLOWABLE HERBICIDE</b>	
<b>Other means of identification</b>		
<b>SDS number</b>	298	
<b>Product registration number</b>	5481-487	
<b>Recommended use</b>	Herbicide.	
<b>Recommended restrictions</b>	No other uses are advised. Keep out of the Reach of Children!	
<b>EPA Registration number</b>	EPA: 5481-487	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Manufacturer</b>		
<b>Company name</b>	AMVAC Chemical Corporation	
<b>Address</b>	4685 MacArthur Court Suite 1200 Newport Beach, CA 92660	
<b>Telephone</b>	AMVAC Chemical Corp	949-260-1200
	AMVAC Chemical Corp	949-260-6270(FAX)
<b>Website</b>	www.Amvac-Chemical.com	
<b>E-mail</b>	CustServ@Amvac-Chemical.com	
<b>Emergency phone number</b>	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

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



<b>Signal word</b>	Warning
<b>Hazard statement</b>	Harmful if inhaled. Causes eye irritation. Harmful to aquatic life.
<b>Precautionary statement</b>	
<b>Prevention</b>	Avoid breathing dust/fume. Wear eye/face protection. Wash hands thoroughly after handling. Avoid release to the environment.

<b>Response</b>	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.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	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

<b>Inhalation</b>	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.
<b>Skin contact</b>	Take off contaminated clothing and wash before reuse. Rinse with water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	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.
<b>Ingestion</b>	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.
<b>Most important symptoms/effects, acute and delayed</b>	Causes eye irritation. May cause redness and pain.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen.
<b>General information</b>	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

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	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.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	In the event of fire, cool tanks with water spray. Water runoff can cause environmental damage.
<b>Specific methods</b>	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).

<b>Skin protection</b>	
<b>Hand protection</b>	Wear chemical resistant gloves (preferably nitrile)
<b>Other</b>	Wear suitable protective clothing.
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment. Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.
<b>Thermal hazards</b>	Not applicable.
<b>General hygiene considerations</b>	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

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

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions. It will decompose at elevated temperatures (360-370°C).
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	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**

<b>Inhalation</b>	Harmful if inhaled.
<b>Skin contact</b>	Slight skin irritant.
<b>Eye contact</b>	Causes mild eye irritation.
<b>Ingestion</b>	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		
<b>acute dermal</b>		
LD50	rabbit	> 5000 mg/kg
<b>oral</b>		
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 0.1% 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 1910.1001-1052)**

Not regulated.

**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)		
<b>Aquatic</b>		
Crustacea	EC50 Water flea (Daphnia magna)	20 - 35 mg/l, 48 hours

Components	Species	Test Results
Fish	LC50	Bluegill ( <i>Lepomis macrochirus</i> )
		> 100 mg/l, 96 hours
<b>Persistence and degradability</b>	Not available.	
<b>Bioaccumulative potential</b>	Not available.	
<b>Partition coefficient n-octanol / water (log Kow)</b>		
Chlorthal-dimethyl		4.28
<b>Mobility in soil</b>	Not available.	
<b>Other adverse effects</b>	Not available.	

### 13. Disposal considerations

<b>Disposal instructions</b>	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.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	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).
<b>Contaminated packaging</b>	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

<b>DOT</b>	Not regulated as dangerous goods.
<b>IATA</b>	Not regulated as dangerous goods.
	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
<b>IMDG</b>	Not regulated as dangerous goods.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.

### 15. Regulatory information

<b>US federal regulations</b>	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.
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>	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 1910.1001-1052)**

Not regulated.

**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](http://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** Aug-29-2018

**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

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**Revision information**

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