SAFETY DATA SHEET



1. Identification

Product identifier 2.4-Dichlorophenoxyacetic acid (ring-13C6) Solution

Other means of identification

Item S-FC7000S

Recommended use For Laboratory Use Only

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Chem Service, Inc.
Address 660 Tower Lane

West Chester, PA 19380

United States

Telephone Toll Free 800-452-9994

Direct 610-692-3026

Website www.chemservice.com
E-mail info@chemservice.com

Emergency phone number Chemtrec US 800-424-9300

Chemtrec outside US +1 703-527-3887

2. Hazard(s) identification

Physical hazardsFlammable liquidsCategory 2Health hazardsAcute toxicity, oralCategory 4Acute toxicity, dermalCategory 4Acute toxicity, inhalationCategory 4

Serious eye damage/eye irritation

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Highly flammable liquid and vapor. Harmful if swallowed. Harmful in contact with skin. Causes

serious eye irritation. Harmful if inhaled.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly

closed. Ground/bond container and receiving equipment. Use explosion-proof

electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear eye protection/face protection. Wear protective gloves/protective clothing. Wear protective

Category 2

gloves/eye protection/face protection.

Response If swallowed: Call a poison center/doctor if you feel unwell. If on skin (or hair): Take off

immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison

center/doctor if you feel unwell. Rinse mouth. If eye irritation persists: Get medical

advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use

appropriate media to extinguish.

Storage Store in a well-ventilated place. Keep cool.

Disposal

Hazard(s) not otherwise

classified (HNOC)

Supplemental information

Dispose of contents/container in accordance with local/regional/national/international regulations.

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Acetonitrile		75-05-8	99.99
2,4-D		94-75-7	0.01

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical advice/attention if you feel unwell. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Get medical advice/attention if you feel unwell.

Most important symptoms/effects, acu

symptoms/effects, acute and delayed

Convulsions. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information

Take off all contaminated clothing immediately. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Alcohol resistant foam. Water fog. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.

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 case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Specific methods

General fire hazards

Use standard firefighting procedures and consider the hazards of other involved materials.

Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors and spray mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Environmental precautions

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid inhalation of vapors and spray mists. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

Biological limit values

Components	Туре	Value	
2,4-D (CAS 94-75-7)	PEL	10 mg/m3	
Acetonitrile (CAS 75-05-8)	PEL	70 mg/m3	
,		40 ppm	
US. ACGIH Threshold Limit Value	s		
Components	Туре	Value	Form
2,4-D (CAS 94-75-7)	TWA	10 mg/m3	Inhalable fraction.
Acetonitrile (CAS 75-05-8)	TWA	20 ppm	
US. NIOSH: Pocket Guide to Cher	nical Hazards		
Components	Туре	Value	
2,4-D (CAS 94-75-7)	TWA	10 mg/m3	
Acetonitrile (CAS 75-05-8)	TWA	34 mg/m3	
		20 ppm	

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

Exposure guidelines

US - California OELs: Skin designation

Acetonitrile (CAS 75-05-8)

Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Acetonitrile (CAS 75-05-8) Skin designation applies.

US ACGIH Threshold Limit Values: Skin designation

2,4-D (CAS 94-75-7) Can be absorbed through the skin. Acetonitrile (CAS 75-05-8) Can be absorbed through the skin.

Appropriate engineering

controls

Explosion-proof general and local exhaust ventilation. 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. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

Touritain and emergency showers are recomme

Individual protection measures, such as personal protective equipment

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

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove

supplier.

Other Wear appropriate chemical resistant clothing.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure

limits (where applicable) or to an acceptable level (in countries where exposure limits have not

been established), an approved respirator must be worn.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. Keep away from food and drink. 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

Physical state Liquid.

Form Liquid.

Color Not available.

Odor Not available.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -49 °F (-45 °C) estimated
Initial boiling point and boiling 178.88 °F (81.6 °C) estimated

range

Flash point 42.0 °F (5.6 °C) estimated

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower

3 % estimated

(%)

Flammability limit - upper

16 % estimated

(%)

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 118.39 hPa estimated

Vapor densityNot available.Relative densityNot available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water)

Not available.

Auto-ignition temperature

975.2 °F (524 °C) estimated

Decomposition temperature Viscosity

Not available.

Not available.

Other information

Density 0.78738 g/cm3 estimated

Explosive properties Not explosive.

Flammability class Flammable IB estimated

Oxidizing properties Not oxidizing.

Percent volatile 99.99 % estimated

Specific gravity 0.79 estimated

VOC (Weight %) 99.99 % estimated

10. Stability and reactivity

ReactivityThe product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous Hazardous polymerization does not occur.

reactions

Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the

flash point. Contact with incompatible materials. Exposure to light. Moisture.

Incompatible materials Strong oxidizing agents. Acids. Alkali metals. Reducing agents. Bases.

Hazardous decomposition

products

No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation Harmful if inhaled.

Skin contact Harmful in contact with skin.

Eye contact Causes serious eye irritation.

Ingestion Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Convulsions. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing,

2000 mg/kg

redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity Harmful if inhaled. Harmful in contact with skin. Harmful if swallowed.

Components Species Test Results

2,4-D (CAS 94-75-7)

<u>Acute</u> Dermal

LD50 Rabbit 1400 mg/kg

Rat

Oral

LD50 Dog 100 mg/kg

Fischer 344 rat 270 - 1103 mg/kg

 Guinea pig
 469 mg/kg

 Hamster
 500 mg/kg

 Mouse
 300 mg/kg

 Rabbit
 800 mg/kg

 Rat
 275 mg/kg

Components **Species Test Results** Acetonitrile (CAS 75-05-8) **Acute** Dermal LD50 Rabbit 390 mg/kg 0.5 ml/kg Inhalation LC100 Dog 16000 ppm, 4 Hours LC50 Guinea pig 5655 ppm, 4 Hours Mouse 3587 ppm, 4 Hours 2693 ppm, 1 Hours Rabbit 2825 ppm, 4 Hours Rat 17100 ppm, 4 Hours 7500 ppm, 8 Hours 330 ppm, 90 Days 75 mg/l Oral LD50 Guinea pig 140 mg/kg 0.177 ml/kg Mouse 269 mg/kg Rat 158 mg/kg 1.68 - 4.49 ml/kg Other

0.25 g/kg

1100 mg/kg 0.85 ml/kg

Mouse

Rat

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye

LD50

irritation

Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicityNo data available to indicate product or any components present at greater than 0.1% are

mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

2,4-D (CAS 94-75-7) 2B Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicityThis product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - Not classified.

single exposure

Not classified.

Specific target organ toxicity -

repeated exposure

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful.

^{*} Estimates for product may be based on additional component data not shown.

12. Ecological information

Ecotoxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results	
2,4-D (CAS 94-75-7)				
Aquatic				
Crustacea	EC50	Water flea (Daphnia pulex)	2.4 - 4.3 mg/l, 48 hours	
Fish	LC50	Fish (Labeo boga)	3.8 mg/l, 96 hours	
Acetonitrile (CAS 75-0	5-8)			
Aquatic				
Fish	LC50	Fathead minnow (Pimephales pror	melas) > 100 mg/l, 96 hours	

^{*} Estimates for product may be based on additional component data not shown.

Bioaccumulative potential

No data is available on the degradability of this product.

Persistence and degradability

Partition coefficient n-octanol / water (log Kow)

2,4-D 2.81 Acetonitrile -0.34

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation

potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of **Disposal instructions**

contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with 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 in accordance with local 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 instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is

emptied. Empty containers should be taken to an approved waste handling site for recycling or

disposal.

14. Transport information

DOT

UN1648 **UN** number

UN proper shipping name Acetonitrile, solution (Acetonitrile RQ = 5001 LBS)

Transport hazard class(es)

3 Class Subsidiary risk 3 Label(s) **Packing group**

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IB2, T7, TP2 Special provisions

150 Packaging exceptions 202 Packaging non bulk 242 Packaging bulk

IATA

UN number **UN1648**

Acetonitrile solution (Acetonitrile) **UN proper shipping name**

Transport hazard class(es)

Class 3 Subsidiary risk Ш Packing group **Environmental hazards** No. ERG Code 3L

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo

aircraft

Allowed.

Cargo aircraft only Allowed.

IMDG

UN number UN1648

Not established.

Transport hazard class(es)

Class 3
Subsidiary risk Packing group II
Environmental hazards

Marine pollutant No. F-E, S-D

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and

the IBC Code

DOT



IATA; IMDG



15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication

Standard, 29 CFR 1910.1200.

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

2,4-D (CAS 94-75-7) Listed. Acetonitrile (CAS 75-05-8) Listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes

Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous No

chemical

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.	
Acetonitrile	75-05-8	99.99	

Other federal regulations

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

2,4-D (CAS 94-75-7) Acetonitrile (CAS 75-05-8)

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

Not regulated.

Safe Drinking Water Act

Not regulated.

(SDWA)

US state regulations

US - New Jersey RTK - Substances: Listed substance

2,4-D (CAS 94-75-7) Acetonitrile (CAS 75-05-8)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed

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

(a))

Acetonitrile (CAS 75-05-8)

US. Massachusetts RTK - Substance List

2,4-D (CAS 94-75-7) Acetonitrile (CAS 75-05-8)

US. New Jersey Worker and Community Right-to-Know Act

2,4-D (CAS 94-75-7) Acetonitrile (CAS 75-05-8)

US. Pennsylvania RTK - Hazardous Substances

2,4-D (CAS 94-75-7) Acetonitrile (CAS 75-05-8)

US. Pennsylvania Worker and Community Right-to-Know Law

2,4-D (CAS 94-75-7)

Acetonitrile (CAS 75-05-8)

US. Rhode Island RTK

2,4-D (CAS 94-75-7) Acetonitrile (CAS 75-05-8)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No

Country(s) or region Inventory name On inventory (yes/no)*

Japan Inventory of Existing and New Chemical Substances (ENCS)

Korea Existing Chemicals List (ECL)

Yes

New Zealand New Zealand Inventory Yes

Philippines Philippine Inventory of Chemicals and Chemical Substances Yes

(PICCS)

United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory Yes

*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 07-20-2017

Version # 01

NFPA ratings Health: 2

Flammability: 3 Instability: 0

Disclaimer

The above information is believed to be correct on the date it was last revised and must not be considered all inclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. OSHA regulations require that if other hazards become evident, an upgraded SDS must be made available to the employee within three months. RESPONSIBILITY for updates lies with the employer and not with CHEM SERVICE, Inc.

Persons not specifically and properly trained should not handle this chemical or its container. This product is furnished FOR LABORATORY USE ONLY! Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticide products, food additives or as household chemicals.

This Safety Data Sheet (SDS) is intended only for use with Chem Service, Inc. products and should not be relied on for use with materials from any other supplier even if the chemical name(s) on the product are identical! Whenever using an SDS for a solution or mixture the user should refer to the SDS for every component of the solution or mixture. Chem Service warrants that this SDS is based upon the most current information available to Chem Service at the time it was last revised. THIS WARRANTY IS EXCLUSIVE, AND CHEM SERVICE, INC. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. This SDS is provided gratis and CHEM SERVICE, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR CONTINGENT DAMAGES.

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