SAFETY DATA SHEET
Quali-Pro® 2DQ

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABEL (attached to and accompanying the product container). This SDS is intended to provide important health and safety information for employers, emergency responders and others handling large quantities of the product in activities generally other than product use as required by the Occupational Health and Safety Act (29 CFR 1910.1200). The product label provides information specifically for product use/application. Use, storage, and disposal of pesticide products is regulated by the EPA under the authority of FIFRA through the product label. All necessary hazard classification and appropriate precautionary use, storage and disposal information is set forth on that label. It is a violation of federal law to use an EPA registered pesticide product in any manner inconsistent with its labeling.

SECTION 1: IDENTIFICATION

Product Name: Quali-Pro® 2DQ
EPA Registration No.: 53883-334
Recommended Use: Herbicide; See product label for a complete list of uses and use sites.
Restrictions on Use: See product label for any restrictions on the use of this product.
Chemical Family: N/A - Mixture
Chemical Name of Active Ingredient(s): Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid
Dimethylamine Salt of Dicamba (3,6-dichloro-o-anisic acid)
Quinclorac: 3,7-dichloro-8-quinolinecarboxylic acid
Manufactured for: Control Solutions, Inc.
5903 Genoa-Red Bluff
Pasadena, TX 77507

FOR FIRE, SPILL, AND/OR LEAK EMERGENCIES CONTACT: CHEMTREC 1-800-424-9300
FOR MEDICAL EMERGENCIES AND HEALTH AND SAFETY INQUIRIES CONTACT: Safety Call 1-866-897-8050

SECTION 2: HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW: Transparent, dark amber liquid. Causes severe eye irritation and moderate skin irritation.

OSHA HCS CLASSIFICATION (29 CFR 1910.1200)

Eye Damage/Irritation	Category 1
Skin Corrosion/Irritation	Category 2
Acute Oral Toxicity	Category 4
Acute Inhalation Toxicity	Category 4

OSHA Signal Word: DANGER

Hazard Statement(s):
Causes serious eye damage
Cases skin irritation
Harmful if swallowed
Harmful if inhaled

Precautionary Statement(s):

Prevention:
Wash hands thoroughly after handling.
Wear eye protection and protective gloves.
Do not eat, drink or smoke when using this product.
Avoid breathing mist/vapors/spray.
Use only outdoors or in a well-ventilated area.

Response: **IF ON SKIN:** Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.
IF SWALLOWED: Call a poison center/doctor if you feel unwell. Rinse mouth.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor, if you feel unwell.

Storage: No statements required. See Section 7 for additional information.

Disposal: Dispose of contents/container in accordance with Federal, state or local laws and regulations.

*Please see Section 15 for an explanation of the difference between this SDS and the product label.

SECTION 3: COMPOSTION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %
Dimethylamine Salt of 2,4-D	2008-39-1	40.0%
Dimethylamine Salt of Dicamba	2300-66-5	4.21%
Quinclorac	84087-01-4	3.30%
Dimethylamine 60%	124-40-3	>1.0%

*Ingredients not listed or listed with a weight % range are considered a trade secret and are withheld under 29 CFR 1910.1200(i).

SECTION 4: FIRST AID MEASURES

IF IN EYES:	Hold eye 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 treatment advice.
IF ON SKIN:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
IF INHALED:	Move person 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.
IF INGESTED:	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed: Severe eye irritation/corrosion. Moderate skin irritation.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Water spray, alcohol-resistant foam, dry chemical or carbon dioxide

Unsuitable Extinguishing Media: Water jet as it may spread fire.

Hazardous Combustion Products: Thermal decomposition may produce toxic hydrogen chloride, oxides of nitrogen and carbon.

Special Protective Equipment & Precautions: Evacuate area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Foam and/or dry chemical are preferred to minimize environmental contamination. If water is used, dike and collect water to prevent run-off. Wear self-

contained breathing apparatus and full fire-fighting turn-out gear (Bunker gear).

Unusual Fire & Explosion Hazards: None known

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: See Section 8 for personal protection equipment.

Environmental Precautions: Keep spilled material and any rinsate from contaminating soil or from entering sewage and drainage systems and bodies of water.

Methods for Containment: Isolate the spill area. Keep unnecessary and unprotected personnel from entering. Dike large spills using absorbent or impervious material such as clay or sand. Recover and contain as much free liquid as possible for re-use.

Methods for Clean-up: Place recovered material in a separate container for re-use. After removal, flush contaminated area thoroughly with soap and water. Pick up wash liquid with additional absorbent and place in a disposable container. Do not put spilled material back in the original container.

Other Information: None known

SECTION 7: HANDLING AND STORAGE

Handling: RECOMMENDATIONS ARE INTENDED FOR MANUFACTURING, PACKAGING AND COMMERCIAL BLENDING WORKERS. PESTICIDE APPLICATORS AND WORKERS must refer to the product label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Handle and open container in a manner as to prevent spillage. Do not eat, drink or smoke while handling this product. Immediately wash off accidental contact with product from skin, clothing and out of eyes.

Storage: **See pesticide label for full information on product storage.** Do not contaminate water, food or feed by storage of this product. Store away from sources of heat, out of direct sunlight and away from incompatible materials. Pesticides should be stored in secured areas away from children and animals.

Storage Temperature (Min/Max): Not determined. Avoid extreme temperatures.

Product Incompatibilities: Strong oxidizers

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Users of a pesticide product must refer to the product label for personal protective equipment requirements.

Exposure Guidelines:

COMPONENT	OSHA PEL	ACGIH TLV	NIOSH REL
2,4-D	10 mg/m^3	10 mg/m^3	
Dimethylamine	10 ppm (TWA)	5 ppm (TWA) 15 ppm (STEL)	

Engineering Controls: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs or other specified exposure limits. Local exhaust ventilation is preferred.

THE PERSONAL PROTECTIVE EQUIPTMENT BELOW IS REQUIRED FOR PRODUCT APPLICATORS, END USERS AND HANDLERS AND COMES FROM THE FIFRA APPROVED PESTICIDE LABEL:

All mixers, loaders, applicators, and other handlers must wear: Long-sleeved shirt and long pants, shoes plus socks, Protective eyewear (goggles, face shield, or safety glasses), Chemical-resistant gloves, Chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.

THE PERSONAL PROTECTIVE EQUIPTMENT BELOW IS INTENDED FOR MANUFACTURING, PACKAGING AND COMMERCIAL BLENDING WORKERS:

Respiratory Protection:	In areas of poor ventilation, use a NIOSH approved respirator with cartridges/canisters approved for pesticides.
Eye Protection:	Chemical goggles or safety glasses and full-face shield.
Protective Gloves:	Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile, neoprene rubber, polyvinyl chloride (PVC) or Viton.
Other Protective Clothing:	Long-sleeved shirt, long pants and shoes plus socks.
General Safety Measures:	Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately after handling this product. Wash outside of gloves before removing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Transparent, dark amber liquid	**Upper/Lower Flammability Limits:**	Not determined
Odor:	Moderate	**Vapor Pressure:**	Not determined
Odor Threshold:	Not determined	**Vapor Density:**	Not determined
pH (1% dispersion):	8.0 – 9.0	**Density (@25°C):**	1.155 g/cm^3
Melting /Freezing Point:	Not determined	**Solubility (water):**	Not determined
Boiling Point/Range:	Not determined	**Partition Coefficient:**	Not determined
Flash Point:	Not applicable	**Auto-ignition Temperature:**	Not determined
Evaporation Rate:	Not determined	**Decomposition Temperature:**	Not determined
Flammability:	Not applicable	**Viscosity:**	11.3 @ 25°C 6.49 @ 39°C

*As an end-use mixture, many of the listed physical and chemical properties are not determined as they primarily apply to pure chemical substances.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	No hazardous chemical reactions known.
Chemical Stability:	Stable under normal storage and handling conditions.
Possibility of Hazardous Reactions:	No potential for hazardous reactions known.
Conditions to Avoid:	Avoid extreme temperatures
Incompatible Materials:	Strong oxidizers
Hazardous Decomposition Products:	Product can decompose if heated to form toxic gases.

SECTION 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Skin, Eyes, Inhalation, Ingestion
Symptoms of Exposure: Severe eye irritation/corrosion. Moderate skin irritation.
Oral LD_{50}: >1.098 mg/kg (rat)
Dermal LD_{50}: >2,000 mg/kg (rat)
Inhalation LC_{50}: >2.11 mg/L (4hr)(rat)
Eye Irritation/Damage: Severely irritating
Skin Corrosion/Irritation: Moderately irritating
Skin Sensitization: Not a skin sensitizer

Chronic/Subchronic Toxicity: Quinclorac: Prolonged overexposure may cause effects to liver and kidneys.
Mutagenicity: Quinclorac: No evidence of mutagenic effects during in vivo or in vitro studies.
2,4-D acid: Not known to be mutagenic.
Dicamba acid: Not known to be mutagenic.
Reproductive Toxicity: Quinclorac: The results of animal studies gave no indication of a fertility impairing effect.
Neurotoxicity: No data available
Target Organs: No data available
Aspiration Hazard: Not anticipated to be an aspiration hazard due to physical characteristics.
Carcinogenicity: Quinclorac: In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.
2,4-D, dimethylamine salt/2,4-D acid: IARC lists exposure to chlorophenoxy herbicides as a class 2B carcinogen - as agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals. EPA lists a D, unclassifiable due to ambiguous data.
Dicamba: EPA Group D – Not classifiable as to human carcinogenicity.

Chemical Name	ACGIH	IARC	NTP	OSHA
Dimethylamine Salt of 2,4-D		Group 2B		

SECTION 12: ECOLOGICAL INFORMATION

Environmental Hazards Statement from FIFRA Regulated Pesticide Label:
This product is toxic to fish and aquatic invertebrates and may adversely affect nontarget plants. 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 may be hazardous to aquatic organisms in water adjacent to treated areas. DO NOT contaminate water when disposing of equipment washwaters or rinsate.

This product has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

Groundwater Contamination: Most cases of groundwater contamination involving phenoxy herbicides have

been associated with mixing/loading and disposal sites. Caution must be exercised when handling 2,4-D pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

ECOTOXICITY DATA:

Fish Toxicity:	2,4-D: LC_{50} (96h) for Rainbow Trout: 250 mg/l
	LC_{50} (96h) for Bluegill Sunfish: 524 mg/l
	Dicamba: LC_{50} (96h) for Rainbow Trout: 135 mg/l
	LC_{50} (96h) for Bluegill Sunfish: 135 mg/l
	Quinclorac: LC_{50} (96h) for Rainbow Trout: > 100 mg/l
	LC_{50} (96h) for Bluegill Sunfish: > 100 mg/l
Aquatic Invertebrate Toxicity:	2,4-D: EC_{50} (48h) for Daphnia: 184 mg/l
	Dicamba: EC_{50} (48h) for Daphnia: 110 mg/l
	Quinclorac: EC_{50} (48h) for Daphnia: 113 mg/l
Aquatic Plant Toxicity:	No data available
Avian Toxicity:	2,4-D: LD_{50} Bobwhite Quail: 500 mg/kg
	Dicamba: LD_{50} (8-day) dietary Bobwhite Quail: > 10,000 ppm
	LC_{50} (8-Day) dietary Mallard Duck: > 10,000 ppm
	Quinclorac: LD_{50} oral Bobwhite Quail: 2,000 mg/kg
	LC_{50} (8-Day) dietary Mallard Duck: > 5,000 ppm
Honeybee Toxicity:	Dicamba: LD_{50} (48-h contact) Honey bee: > 100 µg/bee
	Quinclorac: LD_{50} (96-h) honey Bee: > 100µg/bee

ENVIRONMENTAL EFFECTS:

Persistence and Degradability:	2,4-D: Dissipation studies indicate that 2,4-D degrades rapidly in soils by its volatility, photolysis, and aerobic environments, with a half-life in soil and water at 6 to 15 days. 2,4-D is more persistent in anaerobic aquatic environments with a half-life ranging from 41 to 333 days. Dicamba: Aerobic soil metabolism is the main degradative process for dicamba with a typical half-life of 2 weeks. Degradation is slower when low soil moisture limits microbe populations. In water, microbial degradation is the main route of dicamba dissipation. Quinclorac: Quinclorac can be moderately persistent in the soil. Soil mobility of quinclorac is highly variable and depends on soil type and organic matter. The Koc, depending on soil type, ranged from 13 to 54. Quinclorac is stable to hydrolysis and photolysis.
Bioaccumulation:	No data available
Mobility:	Dicamba poorly binds to soil particles, is potentially mobile in the soil and highly soluble in water.
Other Adverse Effects:	No data available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal: **Refer to the pesticide label for full information on disposal.** Pesticide wastes are toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

Container Disposal: **Refer to the pesticide label for full information on disposal.** When possible, triple rinse the container and offer for recycling if available.

RCRA Characteristics: It is the responsibility of the individual disposing of this product to determine the RCRA classification and hazard status of the waste.

SECTION 14: TRANSPORTATION INFORMATION

DOT (Ground): Package size < 26 gallons: Not regulated
Package size ≥ 26 gallons: UN3082, Environmentally Hazardous Substance, Liquid, N.O.S. (Dimethylamine Salt of 2,4-D), 9, PG III, RQ

IMDG (Sea): UN3082, Environmentally Hazardous Substance, Liquid, N.O.S. (Dimethylamine Salt of 2,4-D), 9, PG III, Marine Pollutant

IATA (Air): UN3082, Environmentally Hazardous Substance, Liquid, N.O.S. (Dimethylamine Salt of 2,4-D), 9, PG III

SECTION 15: REGULATORY INFORMATION

Labeling Requirements Under FIFRA: 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:

DANGER: Corrosive. Causes irreversible eye damage. Harmful if swallowed or absorbed through skin. Avoid contact with skin. DO NOT get in eyes or on skin or clothing.

Difference between SDS and Pesticide Label

	EPA LABEL	OSHA SDS
Signal Word	DANGER	DANGER
Eye Damage/Irritation	Corrosive. Causes irreversible eye damage.	Causes serious eye damage
Skin Corrosion/Irritation	Avoid contact with skin.	Causes skin irritation
Acute Oral Toxicity	Harmful if swallowed.	Harmful if swallowed
Acute Inhalation Toxicity	Not classified	Harmful if inhaled

TSCA Inventory: This product is exempt from TSCA inventory listing requirements as it is solely for FIFRA regulated use.

SARA Title III Information:

Section 302 – Extremely hazardous substances: None

Section 311/312 – Hazard Categories: Immediate (Acute); Delayed (Chronic)

Section 313 – 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 Number	Weight %
2,4-D Acid	94-75-7	33.22%
Dicamba acid	1918-00-9	3.5%

CERCLA – This product contains the following chemicals which have a reportable quantity (RQ) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

Chemical Name	CAS Number	RQ	Quantity of Finished Product
Dimethylamine Salt of 2,4-D	2008-39-1	100 lbs.	26 gallons
Dicamba	1918-00-9	1,000 lbs.	

CALIFORNIA PROPOSITION 65:

Chemical Name	CAS Number	Prop 65 Category(ies)
None listed		

SECTION 16: OTHER INFORMATION

NFPA	**Health Hazards** 3	**Flammability** 0	**Instability** 1	**Special Hazards** – None

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