SAFETY DATA SHEET

DMA® 4 IVM

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	10/28/2022	800080003360	Date of first issue: 10/28/2022

Corteva Agriscience™ encourages you and expects you to read and understand the entire SDS as there is important information throughout the document. This SDS provides users with information relating to the protection of human health and safety at the workplace, protection of the environment and supports emergency response. Product users and applicators should primarily refer to the product label attached to or accompanying the product container. This Safety Data Sheet adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. IDENTIFICATION

Product name : DMA® 4 IVM

Manufacturer or supplier's details

COMPANY IDENTIFICATION

Manufacturer/importer : CORTEVA AGRISCIENCE LLC
9330 ZIONSVILLE RD
INDIANAPOLIS, IN, 46268-1053
UNITED STATES

Customer Information Number : 800-992-5994

E-mail address : customerinformation@corteva.com

Emergency telephone : INFOTRAC (CONTRACT 84224).

+1 800-992-5994 or +1 317-337-6009

Recommended use of the chemical and restrictions on use

Recommended use : End use herbicide product

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin irritation : Category 2

Serious eye damage : Category 1

Specific target organ toxicity - repeated exposure (Inhalation) : Category 2 (Respiratory Tract)

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H318 Causes serious eye damage.
H373 May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary Statements :

Prevention:

P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 + P310 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.
P314 Get medical advice/ attention if you feel unwell.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
salts of 2,4-D	2008-39-1	46.3
edetic acid	60-00-4	>= 3 - < 10
di-methylamine	124-40-3	>= 1 - < 3
2,4-dichlorophenol	120-83-2	>= 0.1 - < 0.3
Balance	Not Assigned	> 40

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

If inhaled : Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respi-

ration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

In case of skin contact	:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
In case of eye contact	:	Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.
If swallowed	:	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 the poison control center or doctor. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	None known.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	:	Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment. Skin contact may aggravate preexisting dermatitis.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam
Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Exposure to combustion products may be a hazard to health. Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion prod-	:	During a fire, smoke may contain the original material in addi-

ucts		tion to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon oxides Nitrogen oxides (NOx) Hydrogen chloride gas
Specific extinguishing methods	:	Remove undamaged containers from fire area if it is safe to do so. Evacuate area. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities. Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained. Prevent from entering into soil, ditches, sewers,underwater. See Section 12, Ecological Information.
Methods and materials for containment and cleaning up	:	Clean up remaining materials from spill with suitable absorbant. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, Recovered material should be stored in a vented container. The vent must prevent the ingress of water as further reaction with spilled materials can take place which could lead to overpressurization of the container.

Keep in suitable, closed containers for disposal.
Wipe up with absorbent material (e.g. cloth, fleece).
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
See Section 13, Disposal Considerations, for additional information.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : To avoid spills during handling keep bottle on a metal tray.
Do not breathe vapors/dust.
Do not smoke.
Handle in accordance with good industrial hygiene and safety practice.
Smoking, eating and drinking should be prohibited in the application area.
Do not get on skin or clothing.
Avoid inhalation of vapor or mist.
Do not swallow.
Do not get in eyes.
Avoid contact with skin and eyes.
Keep container tightly closed.
Take care to prevent spills, waste and minimize release to the environment.
Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Conditions for safe storage : Store in a closed container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in properly labeled containers.
Store in accordance with the particular national regulations.

Materials to avoid : Strong oxidizing agents

Packaging material : Unsuitable material: None known.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
salts of 2,4-D	2008-39-1	TWA	10 mg/m3	Dow IHG
edetic acid	60-00-4	TWA	10 mg/m3	Dow IHG
di-methylamine	124-40-3	TWA	1 ppm	Corteva OEL
		TWA	5 ppm	ACGIH
		STEL	15 ppm	ACGIH
		TWA	10 ppm 18 mg/m3	OSHA Z-1
		TWA	10 ppm 18 mg/m3	OSHA P0

2,4-dichlorophenol	120-83-2	TWA	1 ppm	US WEEL

Engineering measures : Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.
Local exhaust ventilation may be necessary for some operations.

Personal protective equipment

Respiratory protection : Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

Hand protection

Remarks : Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl chloride ("PVC" or "vinyl"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Eye protection : Use chemical goggles.

Skin and body protection : Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid.

Color : Brown

Odor : Musty

Odor Threshold : No data available

pH	:	8.29 (73.6 °F / 23.1 °C) Concentration: 1 % Method: pH Electrode
Melting point/range	:	Not applicable
Freezing point		No data available
Boiling point/boiling range	:	No data available
Flash point	:	> 212 °F / > 100 °C Method: Closed Cup, closed cup
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	1.17 g/cm3 (68 °F / 20 °C)
Solubility(ies) Water solubility	: :	 water based product
Autoignition temperature	:	No data available
Viscosity Viscosity, kinematic	: :	 No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	No decomposition if stored and applied as directed. Stable under normal conditions.
Possibility of hazardous reac-	:	Stable under recommended storage conditions.

tions		No hazards to be specially mentioned. None known.
Conditions to avoid	:	None known.
Incompatible materials	:	None.
Hazardous decomposition products	:	Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon oxides Nitrogen oxides (NOx) Hydrogen chloride gas

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	LD50 (Rat, female): 3,129 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5.34 mg/l Exposure time: 4 h Test atmosphere: dust/mist Symptoms: No deaths occurred at this concentration. Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg

Components:

salts of 2,4-D:

Acute oral toxicity	:	LD50 (Rat): 949 mg/kg LD50 (Mouse, male and female): 976 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit): 2,244 mg/kg

edetic acid:

Acute oral toxicity	:	LD50 (Rat, male and female): 4,500 mg/kg
Acute inhalation toxicity	:	Remarks: Prolonged excessive exposure to dust may cause adverse effects. For narcotic effects: No relevant data found. LC50 (Rat, male): > 1 mg/l Exposure time: 6 h Test atmosphere: dust/mist Assessment: The component/mixture is moderately toxic after short term inhalation.

di-methylamine:

Acute oral toxicity : LD50 (Rat, male and female): 1,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 5610 ppm
Exposure time: 1 h
Test atmosphere: gas

Acute dermal toxicity : LD50 (Rat, male and female): 3,900 mg/kg

2,4-dichlorophenol:

Acute oral toxicity : LD50 (Rat): 2,000 - 5,000 mg/kg
Remarks: Signs and symptoms of excessive exposure may include:
Incoordination.
Lethargy.
Salivation.
Tremors.

Acute inhalation toxicity : LC50 (Rat): 0.97 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): 780 mg/kg
Remarks: Molten or hot 2,4-dichlorophenol is immediately absorbed through skin in amounts which have caused death in humans. Rapid death in humans has been caused by skin exposure without immediate decontamination. Amounts of molten 2,4-dichlorophenol that may cover as little as 1% body surface area (palm of hand-sized) may cause death. 2,4-Dichlorophenol is absorbed more readily through skin when in solution or molten than as a solid.

Skin corrosion/irritation

Product:

Species : Rabbit
Result : Skin irritation

Components:

edetic acid:

Result : No skin irritation

di-methylamine:

Species : Rabbit
Result : Skin irritation

2,4-dichlorophenol:

Species : Rabbit
Result : Causes burns.

Serious eye damage/eye irritation

Product:

Species : Rabbit
Result : Corrosive

Components:

salts of 2,4-D:

Species : Rabbit
Result : Corrosive

edetic acid:

Result : Eye irritation

di-methylamine:

Species : Rabbit
Result : Corrosive

2,4-dichlorophenol:

Species : Rabbit
Result : Corrosive

Respiratory or skin sensitization

Product:

Species : Mouse
Result : Does not cause skin sensitization.

Components:

salts of 2,4-D:

Species : Guinea pig
Result : May cause sensitization by skin contact.

edetic acid:

Assessment : Does not cause skin sensitization.
Remarks : For similar material(s):
Did not cause allergic skin reactions when tested in guinea pigs.

Remarks : For respiratory sensitization:
No relevant data found.

Germ cell mutagenicity

Components:

salts of 2,4-D:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were predominantly negative., Animal genetic toxicity studies were inconclusive

edetic acid:

Germ cell mutagenicity - Assessment	:	Most data indicate that EDTA and its salts are not mutagenic. Minimal effects reported are likely due to trace metal deficiencies resulting from chelating by EDTA.

di-methylamine:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative., Animal genetic toxicity studies were negative.

2,4-dichlorophenol:

Germ cell mutagenicity - Assessment	:	In vitro genetic toxicity studies were negative in some cases and positive in other cases., Animal genetic toxicity studies were negative.

Carcinogenicity

Components:

salts of 2,4-D:

Carcinogenicity - Assessment	:	Available data are inadequate to evaluate carcinogenicity., There is no evidence of carcinogenicity in laboratory animal toxicity studies. While some epidemiological studies report a positive association between 2,4-D exposure and cancer, a weight of evidence analysis of the epidemiology data across studies reveals no indication that 2,4-D causes cancer in humans.

edetic acid:

Carcinogenicity - Assessment	:	The trisodium salt of EDTA did not cause cancer in laboratory animals.

di-methylamine:

Carcinogenicity - Assessment	:	Did not cause cancer in laboratory animals.

2,4-dichlorophenol:

Carcinogenicity - Assessment	:	2,4,6-Trichlorophenol may be present as an impurity at 0.1% in current samples. This material may also have been present when 2 inconclusive results., Did not cause cancer in laboratory animals.

Reproductive toxicity

Components:

salts of 2,4-D:

Reproductive toxicity - As-	:	For similar active ingredient(s)., 2,4-Dichlorophenoxyacetic

sessment		acid., In laboratory animals, excessive doses toxic to the parent animals caused decreased weight and survival of offspring. Contains component(s) which did not cause birth defects in animals; other fetal effects occurred only at doses toxic to the mother., The component(s) is/are:, 2,4-Dichlorophenoxyacetic acid.

edetic acid:

Reproductive toxicity - Assessment	:	Limited data in laboratory animals suggest that the material does not affect reproduction. EDTA and its sodium salts have been reported to cause birth defects in laboratory animals only at exaggerated doses that were toxic to the mother. These effects are likely associated with zinc deficiency due to chelation.

2,4-dichlorophenol:

Reproductive toxicity - Assessment	:	In animal studies, did not interfere with reproduction. Did not cause birth defects or any other fetal effects in laboratory animals.

STOT-single exposure

Product:

Assessment	:	Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Components:

edetic acid:

Assessment	:	Evaluation of available data suggests that this material is not an STOT-SE toxicant.

di-methylamine:

Routes of exposure	:	Inhalation
Target Organs	:	Respiratory Tract
Assessment	:	May cause respiratory irritation.

2,4-dichlorophenol:

Assessment	:	Material is corrosive. Material is not classified as a respiratory irritant; however, upper respiratory tract irritation or corrosivity may be expected.

STOT-repeated exposure

Components:

edetic acid:

Routes of exposure	:	Inhalation
Target Organs	:	Respiratory Tract
Assessment	:	May cause damage to organs through prolonged or repeated

exposure.

Repeated dose toxicity

Components:

salts of 2,4-D:

Remarks : In animals, effects have been reported on the following organs:
Bone marrow.
Adrenal gland.
Eye.
Kidney.
Liver.
Spleen.
Testes.
Thyroid.

edetic acid:

Remarks : Based on information for a similar material:
In animals, effects have been reported on the following organs:
Respiratory tract.

di-methylamine:

Remarks : In animals, effects have been reported on the following organs:
Liver.
Respiratory tract.

2,4-dichlorophenol:

Remarks : In animals, effects have been reported on the following organs:
Blood-forming organs (Bone marrow & Spleen).
Kidney.
Liver.

Aspiration toxicity

Product:

Based on physical properties, not likely to be an aspiration hazard.

Components:

salts of 2,4-D:

Based on physical properties, not likely to be an aspiration hazard.

edetic acid:

Based on physical properties, not likely to be an aspiration hazard.

di-methylamine:

Based on physical properties, not likely to be an aspiration hazard.

2,4-dichlorophenol:

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

salts of 2,4-D:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 250 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 or Equivalent
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 184 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 66.5 mg/l End point: Growth rate inhibition Exposure time: 5 d EbC50 (diatom Navicula sp.): 5.28 mg/l End point: Biomass Exposure time: 5 d EC50 (Lemna gibba (duckweed)): 0.58 mg/l End point: Biomass Exposure time: 14 d
Toxicity to terrestrial organ-isms	:	oral LD50 (Colinus virginianus (Bobwhite quail)): 500 mg/kg bodyweight. Exposure time: 14 d dietary LC50 (Colinus virginianus (Bobwhite quail)): 5620 mg/kg diet. Exposure time: 8 d contact LD50 (Apis mellifera (bees)): > 100 micrograms/bee Exposure time: 48 h End point: mortality GLP: yes oral LD50 (Apis mellifera (bees)): > 100 micrograms/bee Exposure time: 48 h End point: mortality GLP: yes

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

edetic acid:

Toxicity to fish : Remarks: Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50 (Fish): 1,000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203 or Equivalent

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 113 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202 or Equivalent

2,4-dichlorophenol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 6.7 - 11.6 mg/l
Exposure time: 96 h
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.50 - 6.0 mg/l
Exposure time: 24 h

Toxicity to algae/aquatic plants : LC50 (alga Scenedesmus sp.): 11.5 mg/l
End point: Biomass
Exposure time: 48 h
Method: OECD Test Guideline 201 or Equivalent

Toxicity to microorganisms : EC50 (activated sludge): 52.5 mg/l

EC50 (Bacteria): 55 - 75 mg/l

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): 0.0025 mg/cm2
Exposure time: 2 d
End point: survival

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Persistence and degradability

Components:

salts of 2,4-D:

Biodegradability : Result: Readily biodegradable.
Remarks: For similar active ingredient(s).

edetic acid:

Biodegradability	:	Remarks: Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability). aerobic Biodegradation: 37 % Exposure time: 14 d Method: OECD Test Guideline 302B or Equivalent Remarks: 10-day Window: Not applicable Biodegradation: 0 % Exposure time: 30 d Method: OECD Test Guideline 301D or Equivalent Remarks: 10-day Window: Fail
ThOD	:	1.37 kg/kg
Photodegradation	:	Test Type: Half-life (indirect photolysis) Sensitizer: OH radicals Rate constant: 1.81E-10 cm3/s Method: Estimated.

2,4-dichlorophenol:

Biodegradability	:	Result: Not biodegradable Biodegradation: 4 % Exposure time: 28 d Method: OECD Test Guideline 301B Remarks: 10-day Window: Not applicable
Biochemical Oxygen Demand (BOD)	:	76.000 % Incubation time: 5 d 77.000 % Incubation time: 10 d 77.000 % Incubation time: 20 d
ThOD	:	1.18 kg/kg
Photodegradation	:	Test Type: Half-life (indirect photolysis) Sensitizer: OH radicals Rate constant: 2.98E-12 cm3/s Method: Estimated.

Bioaccumulative potential

Components:

salts of 2,4-D:

Partition coefficient: n-octanol/water	:	Remarks: For similar active ingredient(s). 2,4-Dichlorophenoxyacetic acid. Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

edetic acid:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 1.1
Exposure time: 28 d
Method: Measured

Partition coefficient: n-octanol/water : log Pow: -3.86 (77 °F / 25 °C)
Method: Estimated.
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

di-methylamine:

Partition coefficient: n-octanol/water : log Pow: -0.38
Method: Measured
Remarks: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

2,4-dichlorophenol:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 34
Method: Measured

Partition coefficient: n-octanol/water : log Pow: 3.06
Method: Measured
Remarks: Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Balance:

Partition coefficient: n-octanol/water : Remarks: No relevant data found.

Mobility in soil

Components:

salts of 2,4-D:

Distribution among environmental compartments : Remarks: For similar active ingredient(s).
2,4-Dichlorophenoxyacetic acid.
Potential for mobility in soil is very high (Koc between 0 and 50).

edetic acid:

Distribution among environmental compartments : Koc: 98
Remarks: Potential for mobility in soil is high (Koc between 50 and 150).

di-methylamine:

Distribution among environmental compartments : Koc: 13 - 435
Method: Estimated.
Remarks: Potential for mobility in soil is very high (Koc between 0 and 50).

2,4-dichlorophenol:

Distribution among environmental compartments : Koc: 550
Method: Measured
Remarks: Potential for mobility in soil is low (Koc between 500 and 2000).

Balance:

Distribution among environmental compartments : Remarks: No relevant data found.

Other adverse effects

Components:

salts of 2,4-D:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

edetic acid:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

di-methylamine:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

2,4-dichlorophenol:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

Balance:

Results of PBT and vPvB assessment : This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

Ozone-Depletion Potential : Remarks: This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.
If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D Salt)
Class	:	9
Packing group	:	III
Labels	:	9

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (2,4-D Salt)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,4-D Salt)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

Remarks : Stowage category A

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

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (2,4-D Salt)
Class	:	9
Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	no
Reportable Quantity	:	2,4-D Salt only regulated in pack sizes > 98 kg

Further information

Marine Pollutants assigned UN number 3077 and 3082 in single or combination packaging containing a net quantity per single or inner packaging of 5L or less for liquids or having a net mass per single or inner packaging of 5 KG or less for solids may be transported as non-dangerous goods as provided in section 2.10.2.7 of IMDG code, IATA Special provision A197, and ADR/RID special provision 375.
THE ABOVE INFORMATION ONLY APPLIES TO PACKAGE SIZES WHERE THE HAZARDOUS SUBSTANCE MEETS THE REPORTABLE QUANTITY.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : Specific target organ toxicity (single or repeated exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

di-methylamine	124-40-3	>= 1 - < 5 %

US State Regulations

Pennsylvania Right To Know

edetic acid	60-00-4
di-methylamine	124-40-3

The ingredients of this product are reported in the following inventories:

TSCA : Product contains substance(s) not listed on TSCA inventory.

TSCA list

No substances are subject to a Significant New Use Rule.

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:
2,4-dichlorophenol 120-83-2

Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number : 62719-003

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, inhaled or absorbed through the skin.

SECTION 16. OTHER INFORMATION

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
Corteva OEL	:	Corteva Occupational Exposure Limit
Dow IHG	:	Dow Industrial Hygiene Guideline
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
Corteva OEL / TWA	:	Time weighted average
Dow IHG / TWA	:	Time Weighted Average (TWA):
Dow IHG / TWA	:	Time weighted average
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average
US WEEL / TWA	:	8-hr TWA

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely

Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 10/28/2022

Product code: XRM-4436

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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