

SECTION 1: Identification

1.1. Identification

Product form : Mixture
 Trade name : DUO MAXX
 Product code : DUOMAXX

1.2. Recommended use and restrictions on use

Recommended use : Fertilizers

1.3. Supplier

Manufacturer

Timac Agro USA, INC. Inc.
 Route 724 & I-176
 P.O. Box 888
 Reading, PA 19607, PENNSYLVANIA
 USA
 T 1-800-545-5474
info-fds@roullier.com

1.4. Emergency telephone number

Country/Area	Organization/Company	Address	Emergency number	Comment
Americas	3E		+1-760-476-3962 (Access code : 333021)	(24/7)
USA	USA POISON CONTROL CENTER (24h/7d)		1-800-222-1222	

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Serious eye damage/eye irritation Category 2 H319 Causes serious eye irritation
 Reproductive toxicity Category 2 H361 Suspected of damaging fertility or the unborn child
 Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning
 Hazard statements (GHS US) : H319 - Causes serious eye irritation
 H361 - Suspected of damaging fertility or the unborn child
 Precautionary statements (GHS US) : P202 - Do not handle until all safety precautions have been read and understood.
 P280 - Wear protective gloves, protective clothing, eye protection, face protection.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P337+P313 - If eye irritation persists: Get medical advice/attention.

P308+P313 - If exposed or concerned: Get medical advice/attention.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
Glycerol		CAS-No.: 56-81-5	5 – 10	Not classified
Benzyl alcohol		CAS-No.: 100-51-6	1 – 5	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2, H319
Phosphorothioic triamide, N-butyl		CAS-No.: 94317-64-3	1 – 5	Eye Dam. 1, H318 Repr. 2, H361

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation	: Move to fresh air in case of accidental inhalation. Seek medical attention if ill effect develops.
First-aid measures after skin contact	: Take off contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse thoroughly and plentifully with water, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult an eye specialist.
First-aid measures after ingestion	: If swallowed, rinse mouth with water (only if the person is conscious). Go into open air and ventilate suspected area. Do not induce vomiting without medical advice. Seek medical advice (show the label where possible).

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects	: see section(s) : 2.1/2.3).
Chronic symptoms	: Suspected of damaging fertility. Suspected of damaging the unborn child.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : water, carbon dioxide (CO₂), powder and foam.

5.2. Specific hazards arising from the chemical

Fire hazard : Not flammable.

Explosion hazard : Not explosive.

Hazardous decomposition products in case of fire : On combustion or on thermal decomposition (pyrolysis) releases : Carbon oxides (CO, CO₂), Nitrogen oxides. Ammonia. Phosphorus oxides. Sulphur oxides.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Prevent fire-fighting water from entering environment. Contain the extinguishing fluids by bunding.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Self-contained breathing apparatus.

Other information : Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.

Emergency procedures : Do not get in eyes, on skin, or on clothing. Do not breathe vapors. Evacuate unnecessary personnel. Mark the danger area. Only qualified personnel equipped with suitable protective equipment may intervene.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Do not attempt to take action without suitable protective equipment.

Emergency procedures : Ventilate area. Stop leak if safe to do so. Dike and contain spill.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Pump up the product into a suitably labeled spare container. Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Provide good ventilation in process area to prevent formation of vapor. Avoid contact with skin and eyes. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood.
- Handling temperature : > 32 °F
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Remove contaminated clothes. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Provide local exhaust or general room ventilation. The floor of the depot should be impermeable and designed to form a water-tight basin. Comply with applicable regulations.
- Storage conditions : Protect from sunlight. Store in a well-ventilated place. Store closed containers with closure in upper position. Keep out of reach of children.
- Incompatible products : Refer to the detailed list of incompatible materials in section 10 Stability/Reactivity.
- Storage temperature : ≥ 32 °F Store at ambient temperature. Protect from freezing.
- Heat-ignition : Keep away from open flames, hot surfaces and sources of ignition.
- Information on mixed storage : Keep away from food, drink and animal feeding stuffs.
- Storage area : Store away from heat. Store in a well-ventilated place.
- Special rules on packaging : Keep only in original container. Store in a closed container.
- Packaging materials : Plastic.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Glycerol (56-81-5)	
USA - OSHA - Occupational Exposure Limits	
Local name	Glycerin (mist)
OSHA PEL TWA	15 mg/m ³ (Total dust) 5 mg/m ³ (Respirable fraction)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station. Local exhaust and general ventilation must be adequate to meet exposure standards.
- Environmental exposure controls : Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems. Assure that emissions are compliant with all applicable air pollution control regulations. Comply with applicable regulations.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Protective clothing. Gloves. Safety glasses. Mist formation: aerosol mask. Wear a mask.

Materials for protective clothing:	
Wear suitable protective clothing	
Condition	Material
Excellent resistance:	Polyvinylchloride (PVC)

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Hand protection:				
Chemical resistant PVC gloves (to European standard ISO 374-1 or equivalent)				
Type	Material	Permeation	Thickness (mm)	Penetration
Disposable gloves, Reusable gloves	Polyvinylchloride (PVC)			
Eye protection:				
Safety glasses with side guards should be worn to prevent injury from airborne particles and/or other eye contact with this product. ISO 16321-1				
Type		Field of application	Characteristics	
Safety glasses				
Skin and body protection:				
Rubber boots				
Type				
Boots				
Respiratory protection:				
Where excessive vapor may result, wear approved mask				
Device		Filter type	Condition	
Disposable half mask, Reusable half mask, Aerosol mask		Type P2	Protection for Liquid particles	

Personal protective equipment symbol(s):



Other information:

See Heading 7 : 7.1. Precautions for safe handling.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Black
Odor	: characteristic
Odor threshold	: No data available
pH	: 10.2 (10 – 11)
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: 10.1 lb/gal
Solubility	: completely soluble.
Partition coefficient n-octanol/water (Log Pow)	: No data available

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Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable Not applicable
Explosive properties	: Product is not explosive.
Oxidizing properties	: Non oxidizing material according to EC criteria.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

No hazardous decomposition products known at room temperature. In case of fire: See Heading 5. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation

DUO MAXX	
Additional data	No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
Benzyl alcohol (100-51-6)	
LD50 oral rat	1230 mg/kg
LD50 dermal rat	> 2000 mg/kg body weight EPA OTS 798.1100
ATE US (oral)	1230 mg/kg body weight
ATE US (gases)	4500 ppmV/4h

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Benzyl alcohol (100-51-6)	
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

Phosphorothioic triamide, N-butyl (94317-64-3)	
LD50 oral rat	2823 mg/kg (OECD 401 method)
LD50 dermal rat	> 2000 mg/kg (OECD 402 method)
LD50 dermal rabbit	> 2000 mg/kg
LC50 Inhalation - Rat	> 2.1 mg/l/4h
ATE US (oral)	2823 mg/kg body weight

Skin corrosion/irritation	: Not classified No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation pH: 10.2 (10 – 11)
Serious eye damage/irritation	: Causes serious eye irritation. pH: 10.2 (10 – 11)
Respiratory or skin sensitization	: Not classified No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
Germ cell mutagenicity	: Not classified No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
Carcinogenicity	: Not classified No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
STOT-single exposure	: Not classified No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation

DUO MAXX	
Additional data	No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation

STOT-repeated exposure	: Not classified No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
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Additional data	No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation

Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects	: see section(s) : 2.1/2.3).
Chronic symptoms	: Suspected of damaging fertility. Suspected of damaging the unborn child.

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SECTION 12: Ecological information

12.1. Toxicity

- Ecology - general : Based on available data, the classification criteria are not met. No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation. Do not allow into drains or water courses.
- Ecology - water : Do not allow large quantities, as are, to spread into the environment. Do not discharge into drains or rivers.

Benzyl alcohol (100-51-6)	
LC50 - Fish [1]	460 mg/l
EC50 - Crustacea [1]	230 mg/l
EC50 72h - Algae [1]	770 mg/l
Phosphorothioic triamide, N-butyl (94317-64-3)	
LC50 - Fish [1]	96h 1140 mg/l <i>Lepomis macrochirus</i> (Bluegill)
EC50 - Crustacea [1]	290 mg/l (OECD 202 method)
EC50 - Other aquatic organisms [1]	280 mg/l <i>Selenastrum capricornutum</i> , 96 Hours
LC50 - Other aquatic organisms [2]	350 mg/l (<i>Daphnia magna</i> , 48h)

12.2. Persistence and degradability

DUO MAXX	
Persistence and degradability	Not established.
Benzyl alcohol (100-51-6)	
Persistence and degradability	Rapidly degradable
Glycerol (56-81-5)	
Persistence and degradability	Rapidly degradable
Phosphorothioic triamide, N-butyl (94317-64-3)	
Persistence and degradability	Rapidly degradable

12.3. Bioaccumulative potential

DUO MAXX	
Bioaccumulative potential	Not established.
Phosphorothioic triamide, N-butyl (94317-64-3)	
Partition coefficient n-octanol/water (Log Kow)	0.444

12.4. Mobility in soil

DUO MAXX	
Ecology - soil	No additional information available.

12.5. Other adverse effects

- Other information : No other effects known.

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SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Discharging into rivers and drains is forbidden. Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Do not re-use empty containers.

SECTION 14: Transport information

In accordance with DOT / TMD / IMDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Not regulated
Proper Shipping Name (TDG)	: Not regulated
Proper Shipping Name (IMDG)	: Not regulated
Proper Shipping Name (IATA)	: Not regulated

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : Not regulated

TDG

Transport hazard class(es) (TDG) : Not regulated

IMDG

Transport hazard class(es) (IMDG) : Not regulated

IATA

Transport hazard class(es) (IATA) : Not regulated

14.4. Packing group

Packing group (DOT)	: Not regulated
Packing group (TDG)	: Not regulated
Packing group (IMDG)	: Not regulated
Packing group (IATA)	: Not regulated

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

Not regulated

TDG

Not regulated

IMDG

Not regulated

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IATA

Not regulated

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Contains chemical(s) subject to TSCA 12b export notification if product is shipped outside the U.S

Phosphorothioic triamide, N-butyl	CAS-No. 94317-64-3	1 – 5%
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15.2. International regulations

CANADA

Benzyl alcohol (100-51-6)

Listed on the Canadian DSL (Domestic Substances List)

Glycerol (56-81-5)

Listed on the Canadian DSL (Domestic Substances List)

Phosphorothioic triamide, N-butyl (94317-64-3)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 9/16/2024

Data sources : Safety Data Sheet Supplier.

Full text of hazard classes and H-statements

H302	Harmful if swallowed
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled

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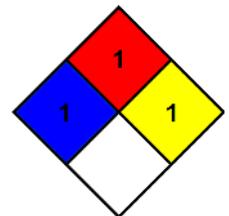
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Full text of hazard classes and H-statements	
H361	Suspected of damaging fertility or the unborn child

Abbreviations and acronyms	
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
LC50	Median lethal concentration
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
ATE	Acute Toxicity Estimate
SDS	Safety Data Sheet
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PNEC	Predicted No-Effect Concentration
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
STP	Sewage treatment plant
vPvB	Very Persistent and Very Bioaccumulative

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.
NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity : 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.



Hazard Rating
Health : 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability : 0 Minimal Hazard - Materials that will not burn
Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection : n - Splash goggles
p - Gloves
q - Boots

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Indication of changes:		
Section	Changed item	Comments
	Personal protection	Added
	Hazard pictograms (GHS US)	Modified
	Precautionary statements (GHS US)	Modified
	Hazard statements (GHS US)	Modified
	Supersedes	Modified
	Revision date	Modified
	Reason for no classification	Modified
	Reason for no classification	Modified
	Reason for no classification	Modified
	Other adverse effects	Removed
	Other information	Modified
1	Recommended use	Added
2.1	GHS-US classification	Modified
3	Composition/Information on ingredients	Modified
4	First-aid measures general	Modified
4	First-aid measures after eye contact	Modified
5.3	Firefighting instructions	Modified
5.3	Other information	Modified
6	Reference to other sections (8, 13)	Modified
6	General measures	Modified
6	Emergency procedures	Modified
6	Protective equipment	Removed
6	Emergency procedures	Added
6	Environmental precautions	Modified
6	For containment	Modified
6	Methods for cleaning up	Modified
6	Other information	Modified
7.1	Precautions for safe handling	Modified
7.1	Hygiene measures	Modified
7.2	Special rules on packaging	Modified
7.2	Heat-ignition	Modified
7.2	Incompatible products	Modified
7.2	Incompatible materials	Removed
7.2	Storage temperature	Added
7.2	Storage conditions	Modified

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7.2	Technical measures	Added
7.2	Packaging materials	Modified
7.2	Storage area	Modified
8.2	Environmental exposure controls	Modified
8.2	Other information	Modified
8.2	Appropriate engineering controls	Added
8.2	Eye protection	Modified
8.2	Materials for protective clothing	Modified
8.2	Hand protection	Modified
8.2	Personal protective equipment	Modified
8.2	Respiratory protection	Modified
9	Oxidizing properties	Added
9	Explosive limits (vol %)	Added
9	Explosive limits (g/m ³)	Added
9	Explosive properties	Modified
9	Density	Modified
10	Conditions to avoid	Modified
11	Additional information	Added
11	Additional information	Added
11	Additional information	Added
12.1	Ecology - water	Modified
12.1	Ecology - general	Modified
12.2	Persistence and degradability	Modified
12.3	Bioaccumulative potential	Modified
12.4	Ecology - soil	Modified
13	Ecology - waste materials	Removed
13	Additional information	Modified
13	Waste disposal recommendations	Modified
13	Regional waste regulation	Added
13	Waste treatment methods	Modified
16	Other information	Added

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.