Tima-UP BMZ

Safety Data Sheet

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

Issue date: 08/14/2020 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : Tima-UP BMZ

Product code : TIMAUPBMZ

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Scientific research and development

Recommended use : Fertilizers

1.3. Supplier

Manufacturer

Timac Agro USA, INC.

Route 724 & I-176

P.O. Box 888

Reading, PA 19607 - USA

T 1-800-545-5474

1.4. Emergency telephone number

Country	Organization/Company	Address	Emergency number	Comment
Americas	3E		+1-760-476-3962 (Access code : 333021)	(24/7)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage
Reproductive toxicity Category 2	H361	Suspected of damaging fertility or the unborn child
Specific target organ toxicity (repeated exposure) Category 2	H373	May cause damage to organs (brain) through prolonged or repeated exposure (Inhalation)

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) : Danger

Hazard statements (GHS US) : H318 - Causes serious eye damage
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs (brain) through prolonged or repeated exposure (Inhalation)

Precautionary statements (GHS US) : P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe spray, vapors.
P280 - Wear protective clothing, eye protection, face protection, protective gloves.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a doctor, a POISON CENTER.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Zinc sulphate monohydrate	(CAS-No.) 7733-02-0	> 3 < 10	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318
manganese sulphate	(CAS-No.) 7785-87-7	>3 < 10	Eye Dam. 1, H318 STOT RE 2, H373
boric acid	(CAS-No.) 10043-35-3	> 1	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 : Prompt treatment is essential to minimize damage. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Take victim to fresh air, in a quiet place in an half laying position and urgently take medical advice. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : For even minor contact, immediately remove contaminated clothing. Wash skin thoroughly with mild soap and water. Do not remove clothing if it sticks to the skin. Get immediate medical advice/attention. Wash contaminated clothing before reuse.

First-aid measures after eye contact : Wash immediately with plenty water (during 20 minutes), also under eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist immediately, even if there are no immediate symptoms. If possible show him this sheet. Failing this, show him the packaging or label.

First-aid measures after ingestion : If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Unconscious: maintain adequate airway and respiration. Place the affected person in the recovery position. Immediately call a poison center or doctor/physician.

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

Symptoms/effects : (see section(s) : 2.1/2.3).

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : Not flammable. Non oxidizing material according to EC criteria.

Explosion hazard : Gives off hydrogen by reaction with metals.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Control the vapors with a water spray. Use water spray or fog for cooling exposed containers. 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. Complete protective clothing. EN 469. Self-contained breathing apparatus.

Other information : Only qualified personnel equipped with suitable protective equipment may intervene. Relevant water authorities should be notified of any large spillage to water course or drain.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Absorb spillage to prevent material-damage. Remove ignition sources. Evacuate area.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.

Emergency procedures : Evacuate and limit access. Mark the danger area. Do not touch or walk on the spilled product. Avoid contact with skin, eyes and clothing. Only qualified personnel equipped with suitable protective equipment may intervene.

6.1.2. For emergency responders

Protective equipment	:	Do not attempt to take action without suitable protective equipment. acid-resistant protective clothing. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	:	Ventilate area. Stop leak if safe to do so. Dike and contain spill.

6.2. Environmental precautions

Prevent liquid from entering sewers, watercourses, underground or low areas. 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. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal.
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.

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. Do not breathe vapors. Use personal protective equipment as required. Avoid contact with skin, eyes and clothing. Do not handle until all safety precautions have been read and understood. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
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. Separate working clothes from town clothes. Launder separately. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	The floor of the depot should be impermeable and designed to form a water-tight basin. Store on an acid resistant underground. Comply with applicable regulations.
Storage conditions	:	Protect from sunlight. Store in a well-ventilated place. Store closed containers with closure in upper position. Store locked up. Keep out of reach of children. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Incompatible products	:	Refer to the detailed list of incompatible materials in section 10 Stability/Reactivity.
Storage temperature	:	0 - 30 °C 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.
Special rules on packaging	:	Keep only in original container. Store in a closed container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

boric acid (10043-35-3)		
ACGIH	Local name	Boric acid
ACGIH	ACGIH TWA (mg/m³)	2 mg/m³ (I - Inhalable particulate matter)
ACGIH	ACGIH STEL (mg/m³)	6 mg/m³ (I - Inhalable particulate matter)
ACGIH	Remark (ACGIH)	TLV® Basis: URT irr. Notations: A4 (Not classifiable as a Human Carcinogen)
ACGIH	Regulatory reference	ACGIH 2020
OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³ inhalable and respirable dust

Zinc sulphate monohydrate (7733-02-0)
Not applicable

manganese sulphate (7785-87-7)		
ACGIH	Local name	Manganese, elemental and inorganic compounds, as Mn
ACGIH	ACGIH TWA (mg/m³)	0.02 mg/m³ (R - Respirable particulate matter) 0.1 mg/m³ (I - Inhalable particulate matter)

manganese sulphate (7785-87-7)		
ACGIH	Remark (ACGIH)	TLV® Basis: CNS impair. Notations: A4 (Not classifiable as a Human Carcinogen)
ACGIH	Regulatory reference	ACGIH 2020

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

Hand protection:

Since the product consists of several substances, the durability of the glove material cannot be estimated and needs to be tested before use

Type	Material	Permeation	Thickness (mm)	Permeation
Reusable gloves, Disposable gloves	butyl rubber, Fluoroelastomer (FKM), Viton® II, Silver Shield®	3 (> 60 minutes)		

Eye protection:

Safety glasses with side guards should be worn to prevent injury from airborne particles and/or other eye contact with this product

Type	Use	Characteristics
Safety glasses, Face shield	Droplet	With side shields

Skin and body protection:

Skin protection appropriate to the conditions of use should be provided

Respiratory protection:

Device	Filter type	Condition
Reusable half mask, Full face mask	ABEK-P3	vapor protection, Mist formation

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 : brown

Odor : There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure.
Mixture contains one or more component(s) which have the following odour:
Slightly acidic

Odor threshold : No data available

pH : 4.5

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
Specific gravity / density	:	9.7 lb/gal
Solubility	:	Soluble.
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
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

Heat. Direct sunlight.

10.5. Incompatible materials

Strong bases.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. In case of fire: See Heading 5.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	:	Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	:	Not classified (Based on available data, the classification criteria are not met)
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

ATE US (oral)	6630.772 mg/kg body weight
boric acid (10043-35-3)	
LD50 oral rat	> 2000 mg/kg (OECD 401 method)
LD50 dermal rabbit	> 2000 mg/kg FIFRA (40 CFR 163)
Additional information	Safety Data Sheet Supplier
Zinc sulphate monohydrate (7733-02-0)	
LD50 oral rat	574 mg/kg body weight (OECD 401 method)
LD50 dermal rat	> 2000 mg/kg (OECD 402 method)
ATE US (oral)	574 mg/kg body weight
Additional information	Safety Data Sheet Supplier
manganese sulphate (7785-87-7)	
LD50 oral rat	2150 mg/kg Indian Journal of Pharmacology, 23(3): 153-159

manganese sulphate (7785-87-7)	
LC50 inhalation rat (mg/l)	> 4.45 mg/l (OECD 403 method)

Skin corrosion/irritation : Not classified (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)

pH: 4.5

Serious eye damage/irritation : Causes serious eye damage.

pH: 4.5

Respiratory or skin sensitization : Not classified (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)

Germ cell mutagenicity : Not classified (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

Carcinogenicity : Not classified (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

manganese sulphate (7785-87-7)	
NOAEL (chronic,oral,animal/male,2 years)	615 mg/kg body weight
NOAEL (chronic,oral,animal/female,2 years)	715 mg/kg body weight

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

STOT-single exposure : Not classified (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

STOT-repeated exposure : May cause damage to organs (brain) through prolonged or repeated exposure (Inhalation).

manganese sulphate (7785-87-7)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

(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)

Viscosity, kinematic : No data available

Symptoms/effects : (see section(s) : 2.1/2.3).

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life. Do not allow uncontrolled discharge of product into the environment. Do not allow into drains or water courses. 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.

boric acid (10043-35-3)	
LC50 other aquatic organisms 1	Boron - 48h 45 - 83 ml/l aquatic invertebrates
NOEC (acute)	10d 10 mg/l Chlorella pyrenoidosa
Additional ecotox information	Data sources : Safety Data Sheet Supplier

Zinc sulphate monohydrate (7733-02-0)	
LC50 fish 1	Zn 0.169 mg/l Oncorhynchus mykiss (Rainbow trout)
Additional ecotox information	Data sources : Safety Data Sheet Supplier

manganese sulphate (7785-87-7)	
LC50 fish 1	14.5 mg/l Oncorhynchus mykiss (OECD 203 method)
EC50 Daphnia 1	9.8 mg/l Daphnia magna (Results obtained on a similar product)
ErC50 (algae)	61 mg/l Desmodesmus subspicatus (OECD 201 method)
NOEC chronic fish	0.6 mg/l Onchorhynchus mykiss, 4 months

12.2. Persistence and degradability

Tima-UP BMZ	
Persistence and degradability	Not established.
boric acid (10043-35-3)	
Persistence and degradability	Not biodegradable.
Zinc sulphate monohydrate (7733-02-0)	
Persistence and degradability	Not applicable (inorganic substance).
manganese sulphate (7785-87-7)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	Not applicable

12.3. Bioaccumulative potential

Tima-UP BMZ	
Bioaccumulative potential	Not established.
boric acid (10043-35-3)	
Log Pow	-0.757
Bioaccumulative potential	Low bioaccumulation potential.
Zinc sulphate monohydrate (7733-02-0)	
Bioaccumulative potential	Not relevant.
manganese sulphate (7785-87-7)	
Bioaccumulative potential	Not potentially bioaccumulable.

12.4. Mobility in soil

Tima-UP BMZ	
Ecology - soil	Soluble in water.
boric acid (10043-35-3)	
Ecology - soil	Very mobile.
Zinc sulphate monohydrate (7733-02-0)	
Log Koc	2.2

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Disposal must be done according to official regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Zinc sulphate monohydrate	CAS-No. 7733-02-0	> 3 < 10%

Zinc sulphate monohydrate (7733-02-0)	
CERCLA RQ	1000 lb

15.2. International regulations

CANADA

boric acid (10043-35-3)
Listed on the Canadian DSL (Domestic Substances List)

Zinc sulphate monohydrate (7733-02-0)
Listed on the Canadian DSL (Domestic Substances List)

manganese sulphate (7785-87-7)
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

Data sources : Section 1.2, 8.1, 11 & 12 are based on components' Chemical Safety Report and/or datas from components' supplier.

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Full text of H-phrases:

H302	Harmful if swallowed
H318	Causes serious eye damage
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure

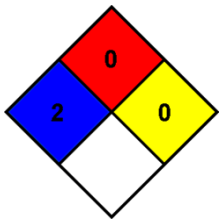
Abbreviations and acronyms:

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
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
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 : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

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 : G

G - Safety glasses, Gloves, Vapor respirator

SDS US (GHS HazCom 2012)

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.