

## SAFETY DATA SHEET

ACCORDING TO THE SOUTH AFRICAN REGULATIONS FOR HAZARDOUS CHEMICAL AGENTS - 2021

### CARBOLOGY® AnB

Revised on / Version: 01/10/2022 / 0004  
 Replaces Revision of / Version: 30/06/2019 / 0003

PAGE 1 OF 11

#### SECTION 1: Product and Company Identification

##### Identification of the product/preparation

Product Name:	<b>CARBOLOGY® AnB</b>
Trade Name/Synonyms:	<b>CARBOLOGY® AnB</b>
Registration Number:	K8588
Product Description and Type:	<b>CARBOLOGY® AnB</b> Is a water-soluble fertilizer for use as a foliar feed on young, non-bearing trees.

##### Active Ingredient

Formula:	Multi-Constituent Substance
CAS Number:	Not applicable

##### Supplier

Company Name: Rolfes Agri (Pty) Ltd  
 Address: 288 Mundt Street  
 Waltloo  
 Pretoria  
 South Africa  
 Phone Number: +27(0)12 803 0145  
 E-mail Address: info@rolfesagri.co.za

##### Emergency Phone Numbers

Nature of Emergency	Emergency Operator	Telephone Number
Office Hour Poisoning Helpline	Rolfes Agri (Pty) Ltd	+27 (12) 803 0145
Spill Response and Transport Incidents	Spill Tech, Oil, and chemical pollution control	+ 27 (0) 86 100 0366 + 27 (0) 83 253 6618 www.spilltech.co.za

**Relevant identified uses of the product and uses advised against**

For use in Agriculture and use as per the product label

**SECTION 2: Hazards Identification****Classification of the substance or mixture**

This product is classified as hazardous according to the criteria in South Africa - GHS classification and labelling of chemicals and the Regulations for Hazardous Chemical Agents - 2021.

**Classification:**

Hazard class	Category	Hazard Statement Number
Reproductive Toxicity	1B	H360
Serious Eye Damage/Eye Irritation	1	H318
Skin Corrosion/Irritant	3	H316
Hazardous to the aquatic environment, long-term hazards	2	H411
Hazardous to the Aquatic Environment, Acute Hazard	1	H400

**Label Elements**

South Africa. GHS classification and labelling of chemicals and the Regulations for Hazardous Chemical Agents - 2021.

**Pictograms:****Signal Word:**

Danger

**Hazard Statements:**

Statement Number	Hazard Statement
H360	May damage fertility or the unborn child
H318	Causes serious eye damage
H316	Causes mild skin irritation
H411	Toxic to aquatic life with long lasting effects
H400	Very toxic to aquatic life

**Precautionary Statements:****General –**

Statement Number	Precautionary Statement
P101	If medical advice is needed, have container or label at hand.
P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

**Prevention -**

Statement Number	Precautionary Statement
P203	Obtain, read, and follow all safety instructions before use.
P280	Wear safety goggles plus a dust mask

**CARBOLOGY® AnB**

P364 + P265	Wash hands and affected areas thoroughly after handling. Do not touch eyes.
P273	Avoid release to the environment.

**Response -**

Statement Number	Precautionary Statement
P318	IF exposed or concerned, get medical advice.
P305 + P354 + P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P317	If skin irritation occurs: Get medical help.
P391	Collect spillage.

**Storage -**

Statement Number	Precautionary Statement
P405	Store locked up.

**Disposal -**

Statement Number	Precautionary Statement
P501	Empty all pesticides from the container by placing it upside down over the spray tank and holding it there for at least 30 seconds. Puncture the rinsed container to render it useless and send to a recycler.

**Other Hazards**

None known

**SECTION 3: Composition/Information on Ingredients****Mixture**

<b>Common Name:</b>	<b>CARBOLOGY® AnB</b>
<b>IUPAC/Chemical Name:</b>	<b>CARBOLOGY® AnB</b>
<b>Chemical Family:</b>	
<b>Formulation:</b>	Multi-Constituent Substance

**Ingredients with Hazard Concerns (GHS)**

According to UN GHS criteria.

Hazardous Component	CAS Number	Weight - %	GHS Classification
Boric acid	10043-35-3	<10	Reproductive Toxicity 1B
Zinc Sulphate	7446-19-7	<10	Eye damage 1 Aquatic Acute 1 Aquatic Chronic 2
Citric acid	5949-29-1	<10	Skin Irrit. 3

**NOTE:** There are no other ingredients present according to the current knowledge of the supplier (considering their concentrations present in the product) that are classified as hazardous to health or the environment and that cause/contribute to the correct GHS classification of this product. These ingredients are therefore, in terms of the South African Hazardous Chemical Agent Regulations 2021; Regulation 14(b), not listed.

**SECTION 4: First-Aid Measures**

**Description of First-aid Measures**

<b>General Advice</b>	The symptoms resulting from direct exposure to the product could appear a while after exposure. If there is persistent discomfort, seek medical attention. Provide this SDS to medical personnel for treatment. Immediately remove contaminated clothing and remove the affected person from the contamination area. Keep the person warm, calm and covered up. First Aid personnel should pay attention to their own safety.
<b>Eye Contact</b>	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>Skin Contact</b>	If skin irritation occurs: Get medical help.
<b>Inhalation</b>	If exposed or concerned, get medical advice.
<b>Ingestion</b>	IF SWALLOWED: Get medical help.

**Most important symptoms/effects, acute and delayed**

Symptoms of exposure to the product include skin irritation and eye irritation.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** None.

**Specific treatments:** Treat symptomatically supportively.

**SECTION 5: Firefighting Measures**

<b>Suitable (and unsuitable) extinguishing media</b>	Use carbon dioxide, dry chemical, alcohol resistant foam, or water spray. Do not use water jets.
<b>Specific hazards arising from the chemical including thermal decomposition products</b>	Fires involving the product may produce irritating or poisonous vapours, mists, or other products of combustion. Closed containers may explode from vapour expansion in high heat.
<b>Special protective equipment and precautions for fire-fighters</b>	Firefighters must wear emergency equipment including positive pressure self-contained breathing apparatus with a full-face mask. Remove unaffected containers from fire area if possible.
<b>Additional provisions</b>	Act in accordance with the site's Internal Emergency Plan and the Workplace Specific Procedures for actions to be taken after an accident or other emergencies.

**SECTION 6: Accidental Release Measures****Personal precautions, protective equipment, and emergency procedures**

Ventilate the area of the spill or leak, especially when in confined areas.

Do not touch or walk-through spilled material as slippery when spilt.

Contain spills if it can be done without risk and clean-up immediately.

Wear appropriate protective clothing recommended in Section 8 of the SDS.

**Environmental Precautions**

Prevent spillage or further leakage if safe to do so.

Do not allow the spilt product to enter water courses and drains and avoid contact with soil.

Do not allow the spilt product to spread to other areas - keep the spilt material contained and isolated.

Report spills and releases as required to appropriate authorities if the spilt product has caused environmental pollution (sewers, water ways, soil, or air).

**Methods for cleaning up**

**For small spills**, Sweep up with damp absorbent material. Place into a labelled waste container subsequent reclamation or disposal. Keep the wash water out of drains, sewers and waterways.

**For large spills**, Sweep up with absorbent material. Avoid creating dusty conditions and prevent wind dispersal and place the residues into a suitable container for proper disposal. Keep the wash water out of drains, sewers and waterways.

**Reference to other sections**

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

**SECTION 7: Handling and Storage**

**Precautions for safe handling**

Always provide good ventilation in the work area. Prevent contact with eyes, skin and clothing. Do not breathe in dust/vapours/spray mists. Wear protective clothing and equipment during handling as described in Section 8 of the SDS.

Do not eat or drink during use. Wash the hands and face thoroughly with soap after handling. Keep containers closed when not in use. Do not permit smoking in use or storage areas.

Locate emergency showers and eye-rinsing facility near the work/handling area. Maintain good normal industrial hygiene and housekeeping practices in areas where the product is used/handled.

**Conditions for safe storage, including any incompatibilities**

Always store locked up and keep containers tightly closed when not in use. Store in a cool, dry and well-ventilated place, out of direct sunlight. Check storage containers regularly for leaks and protect containers from physical damage. Store in the original container, avoid cross contamination with other agricultural products. Keep out of reach of children, uninformed persons, and animals. Do not contaminate water, food, or feed by storage or disposal.

It is recommended to have appropriate spill control kits equipped with absorbent material in close proximity to storage areas (see Section 6).

**Specific end use(s)**

Use as directed. Use original container.

**SECTION 8: Exposure Controls and Personal Protection**

**National Occupational Exposure Limits – Restricted limits for hazardous chemical agents:**

Component	Type	Control Parameter	Update	Basis
Not applicable	OEL-eight hour TWA	N/A	2021	South African RELs*
	OEL-STEL/C	N/A	2021	South African RELs*

\*REL: Recommended Exposure Limit.  
 OEL-eight hour TWA: Occupational Exposure Limit- Time Weighted Average. Calculated over an eight-hour working day, for a five-day working week.  
 OEL-STEL/C: Occupational Exposure Limit – short Term Exposure Limit /Ceiling Limit. Peak airborne concentration determined over the shortest analytically practicable period of time, which does not exceed 15 minutes.

**National Biological Exposure Indices (BEIs) for hazardous chemical agents:**

Component	Sample Matrix	Sample Time	Value
N/A	N/A	N/A	N/A

**Appropriate engineering controls**

Good general ventilation should be sufficient to maintain airborne concentrations and exposure below occupational exposure limits.

**Personal Protective Equipment**

<b>Respiratory Protection:</b>	Respiratory protection selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted and well-maintained particulate filter respirator, complying with an approved standard. Respirator selection and use should be based on contaminant type, form and concentration. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.
<b>Skin and Hand Protection:</b>	Select skin and hand protection based on the task being performed and the risks involved with the task. The gloves should be replaced immediately in case of damage or signs of wear. The personal protective clothing must be properly fitted and well maintained.
<b>Eye/Face Protection:</b>	Select safety eye/face protection based on the task being performed and the risks involved with the task. Wear tightly fitted and well-maintained safety eyewear compliant with an approved standard
<b>Hygiene Measures:</b>	Wash the hands and/or face before breaks, eating, smoking or using the lavatory and at the end of the shift/working period. Eye wash fountains and safety showers should be available and easily accessible. Wash contaminated clothing before reuse.

**Environmental exposure controls**

In accordance with the local legislation for the protection of the environment it is recommended to avoid environmental spillage or releases of both the product and its container.

**SECTION 9: Physical and Chemical Properties**

Data applicable to mixture

<b>Appearance</b>	Appearance/physical state	Powder
	Odour characteristics	Specific odour

	Colour	Light blue
<b>Volatility</b>	Boiling point (°C)	Not applicable
	Vapour pressure (Pa)	Not applicable
	Evaporation Rate at 20 °C	Not applicable
<b>Product Description</b>	Relative density (kg/m <sup>3</sup> , relative density of water =1)	Not applicable
	Solubility in water (g/100mL)	Not applicable
	Decomposition temperature (°C)	Not applicable
	Melting point/freezing point (°C)	Not applicable
	pH	Not applicable
	Density/relative density (g/cm <sup>3</sup> )	Not applicable
	Particle characteristics	Not applicable
<b>Flammability</b>	Flammable (Y/N)	Not applicable
	Flash point (°C)	Not applicable
	Flammable limits-LEL	Not applicable
	Auto-ignition Temperature (°C)	Not applicable

\*Not relevant due to the nature of the product, not providing information property of its hazards.

#### Other Hazard Information

None known

## SECTION 10: STABILITY AND REACTIVITY

#### Reactivity

The product is stable under normal conditions

#### Chemical Stability

Stable under normal ambient conditions of use, storage, and transport.

#### Possibility of Hazardous Reactions

None known under conditions of normal use.

#### Conditions to Avoid

Avoid extreme temperatures ( >50°C). Keep away from heat and ignition sources.

#### Incompatible Materials

Avoid strong oxidizing agents and acids.

#### Hazardous Decomposition Products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological Information

#### Information on likely routes of exposure

##### Toxicokinetics, metabolism and distribution:

Non-human toxicological data: No Information available.

Method: No Information available.

Dosage: No Information available.

Routes of administration: No Information available.

Results: No Information available.

Absorption: No Information available.

Distribution: No Information available.

Metabolism: No Information available.

Excretion: No Information available.

**Information on toxicological effects**

Acute oral toxicity: Manganese Glycinate, Magnesium Sulphate Anhydrous, ZNSO<sub>4</sub>,H<sub>2</sub>O & Cu EDTA

Danger! According to the classification provided by companies to ECHA in REACH registrations this substance is harmful if swallowed

Classified for Category 5

Acute dermal toxicity: Does not meet the GHS Classification criteria.

Acute inhalation toxicity: Does not meet the GHS Classification criteria.

Skin corrosion/irritation: Citric Acid

Danger! According to the classification provided by companies to ECHA in CLP notifications this substance causes skin irritation.

Classified for Category 3

Serious eye damage/irritation: ZNSO<sub>4</sub>,H<sub>2</sub>O, Cu EDTA & Citric Acid

Danger! According to the classification provided by companies to ECHA in CLP notifications this substance causes serious eye damage.

Classified for Category 1.

Respiratory or skin sensitization: Does not meet the GHS Classification criteria.Warning!

Germ cell mutagenicity: Does not meet the GHS Classification criteria.

Carcinogenicity: Does not meet the GHS Classification criteria.

Reproductive toxicity: Does not meet the GHS Classification criteria.

STOT-single exposure: Does not meet the GHS Classification criteria.

STOT-repeated exposure: Does not meet the GHS Classification criteria.

Aspiration hazard: Does not meet the GHS Classification criteria.

**Symptoms related to the physical, chemical, and toxicological characteristics**

Symptoms of exposure to the product include eye irritation and skin irritation.

**SECTION 12: Ecological Information****Ecotoxicity**

Short-term (Acute) hazard Aquatic: ZNSO<sub>4</sub>,H<sub>2</sub>O

Danger! According to the classification provided by companies to ECHA in CLP notifications this substance is very toxic to aquatic life.

Classified for Category 1

Crustaceans - Daphnia 48h mg/L EC50- 1.4 mg/L

Fish 96h mg/L LC50- 0.33 mg/L

Algae and Aquatic Plants 72h EC50 (mg/L)- 64.8 mg/L

Long-term (Chronic) hazard Aquatic: Thiram

Danger! According to the classification provided by companies to ECHA in CLP notifications this substance is very toxic to aquatic life with long lasting effects.

Classified for Category 2

Crustaceans - Daphnia 48h mg/L EC50- No information available.

Fish NOEC/L- No information available

Biodegradability in the aquatic environment: No information available

**Toxicity to other species.**

Birds: No information available



Bees: No information available.

**Other Environmental and Adverse Effects:**

**Persistence and Degradability:**

No information available

**Bioaccumulative Potential:**

No information available.

**Mobility in Soil:**

No information available.

**Other Adverse Effects:**

None Known

**SECTION 13: Disposal Considerations**









**Waste handling and disposal**

Dispose product related waste in accordance with all local regulations and prevent the contamination of water, food, or feed by storage or disposal of the waste.

**General container handling**

Empty all pesticides from the container by placing it upside down over the spray tank and holding it there for at least 30 seconds. Puncture the rinsed container to render it useless and send to a recycler. Do not use empty containers for any other purpose.

**SECTION 14: Transport Information**

	Land Transport (ADR/RID)	Inland Waterways (AND/ADNR)	See Transport (IMDG)	Air Transport (ICAO-TI/IATA-DGR)
<b>UN Number</b>	3077	3077	3077	3077
<b>UN Proper Shipping Name</b>	Environmentally hazardous substance, solid, n.o.s (contains Zinc sulphate mono hydrate)	Environmentally hazardous substance, solid, n.o.s (contains Zinc sulphate mono hydrate)	Environmentally hazardous substance, solid, n.o.s (contains Zinc sulphate mono hydrate)	Environmentally hazardous substance, solid, n.o.s (contains Zinc sulphate mono hydrate)
<b>Transport Hazard Class</b>	9	9	9	9
<b>Transport Hazard Class Pictogram</b>				
<b>Transport Subsidiary Class</b>	-	-	-	-
<b>Packaging Group</b>	III	III	III	III
<b>Environmental Hazard</b>				

## SECTION 15: Regulatory Information

### Safety, health, and environmental regulations/legislation for the mixture.

#### South Africa

Regulations for Hazardous Chemical Agents – 2021 – SA Occupational Health and Safety Act. - Handling, labelling and Safety Data Sheets for hazardous and GHS classified substances and mixtures. Occupational Exposure Limits.

Hazardous Substances Act, 1973 (Act No.15 of 1973) - Requirements on the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of hazardous substances.

Occupational Health and Safety Act No. 85 of 1993.- Occupational Health and Safety Standards for employers and users working with and around hazardous chemical substances.

National Road Traffic Act, 1996 (ACT NO. 93 of 1996). - The identification and classification of dangerous goods for transport by road and rail modes.

#### Botswana

Pesticides and Toxic Substances Regulations. 1994 (2006) - Control and management of pesticides and other toxic substances.

Environmental and Pollution Control Act. 1990 - Hazardous waste disposal, hazardous substances, pesticides and effluent wastewater/discharge.

#### Namibia

Labour Act 11 of 2007 - Hazardous substances classification, labelling, Chemical Safety Data Sheets and Occupational Exposure Limits. Notification of the use of carcinogens and other controlled substances.

Regulations relating to the Health and Safety of Employees at Work Government Notice 156 of 1997. Labour Act 11 of 2007 schedule, item 2(2). - Occupational Health and Safety Standards for employers and users working with and around hazardous chemical substances.

## SECTION 16: Other Information

### Indication of changes

Alignment to the GHS.

### Relevant classification and H-Statements (Number and full text):

Reproductive Toxicity- Category 1B

H360: May damage fertility or the unborn child

Serious Eye Damage/Eye Irritation- Category 1

H318: Causes serious eye damage

Skin Corrosion/Irritant- Category 3

H316: Causes mild skin irritation

Hazardous to the aquatic environment, long-term hazards- Category 2

H411: Toxic to aquatic life with long lasting effects

Hazardous to the Aquatic Environment, Acute Hazard- Category 1

H400: Very toxic to aquatic life

### Key to Abbreviations

AND European Provisions concerning the International Carriage of Dangerous Goods by inland Waterways

ADR The European Agreement concerning the International Carriage of Dangerous

	Goods by Road
ATE	Acute Toxicity Estimate
COD	Chemical Oxygen Demand
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IMDG	International Maritime Dangerous Goods
Log <sub>POW</sub>	Logarithm of the octanol/water partition coefficient
LD50	Lethal Dose 50
LC50	Lethal Concentration 50
RID	The Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
UN	United Nations

### Notice to Reader

The information contained in this Safety Data Sheet relate only to the specific product and do not relate to the use of the product in combination with any other product or process. Information in the SDS is supplied to the best of ROLFES AGRI (PTY) LTD's knowledge and are believed to be current and correct as of the date on this SDS. All reasonable efforts were exercised to compile this SDS in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

The SDS only provides information applicable to the health, safety and environmental hazards of this product at the date of issue in order to facilitate the safe use, handling, storage and transport of this product and does not replace any product information or product specifications.

It is not possible for ROLFES AGRI (PTY) LTD to anticipate or control all conditions under which this product, this product may be used, handled, stored or transported. The obligation of the user, receiver, handler or transporter remains to review the content of the SDS prior to potentially exposing persons/employees to the product and to consider any risks that may associated with the hazards of the product during use, handlings, storage or transportation. Appropriate health, safety and environmental protection risk mitigating measures must be in place and such information must be communicated to all persons that might be involved with and exposed to this product.

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**END OF SAFETY DATA SHEET**