

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE COMPANY OR UNDERTAKING

Chemical product identification : CARNIVAL®

#### Relevant identified uses of the substance or mixture and uses advised against

Recommended use : A fertilizer with micronutrients for use in agriculture and horticulture

Restrictions on use : Use as recommended by the label.

#### Details of the supplier of the safety data sheet

Company name of supplier : FMC AGRO LIMITED

Supplier's address : RECTORS LANE  
PENTRE, FLINTSHIRE, CH5 2DH  
UNITED KINGDOM  
TELEPHONE: + 44 1244 537370  
TELEFAX: +44(0)1244 532097

E-mail address : SDS-Info@fmc.com

Emergency and toxicological information number in Chile : Chile: Spills: CITUC: +56 2 2247 3600 (24 hours) Fire: 132 (24 hours)  
+56-22-5814934 (CHEMTREC - Chile)  
1 703 / 741-5970 (CHEMTREC - International)

Medical Emergency Number : Chile: CITUC: +56 2 2635 3800 (24 hours)

---

### SECTION 2. HAZARDS IDENTIFICATION

#### Classification of the substance or mixture

Acute toxicity (Oral) : Category 4

Serious eye damage/eye irritation : Category 1

Long-term (chronic) aquatic hazard : Category 3

#### Label elements

Hazard pictograms :



Signal Word : Danger

# SAFETY DATA SHEET



## CARNIVAL®

Version 1.0      Revision Date: 13.02.2024      SDS Number: 50001104      Date of last issue: -  
Date of first issue: 13.02.2024

Hazard Statements : H302 Harmful if swallowed.  
H318 Causes serious eye damage.  
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
P280 Wear eye protection/ face protection.  
**Response:**  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
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.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

None known.

## SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Systematic chemical name	Common Name	CAS-No.	Concentration or range (% w/w)	Classification
nitric acid, ammonium calcium salt	nitric acid, ammonium calcium salt	15245-12-2	>= 50 - < 70	Acute toxicity (Oral), Category 4 Serious eye damage, Category 1
magnesium nitrate	magnesium nitrate	10377-60-3	>= 5 - < 10	Oxidizing solids, Category 3 Serious eye damage/eye irritation, Category 2
boric acid	boric acid	10043-35-3	>= 0,1 - < 1	Reproductive toxicity, Category 1B
zinc oxide	zinc oxide	1314-13-2	>= 0,025 - < 0,1	Reproductive toxicity, Category 2 Specific target organ toxicity - repeated

# SAFETY DATA SHEET



## CARNIVAL®

Version 1.0	Revision Date: 13.02.2024	SDS Number: 50001104	Date of last issue: - Date of first issue: 13.02.2024
----------------	------------------------------	-------------------------	--

				exposure (Oral) (Central nervous system, Reproductive organs), Category 2 Short-term (acute) aquatic hazard, Category 1 Long-term (chronic) aquatic hazard, Category 1
--	--	--	--	--

### SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.  
Consult a physician.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- Inhalation : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- Skin contact : Wash off with soap and water.  
If symptoms persist, call a physician.  
Wash contaminated clothing before re-use.
- Eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Continue rinsing eyes during transport to hospital.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- Ingestion : Clean mouth with water and drink afterwards plenty of water.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed.  
Causes serious eye damage.
- Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.
- Notes to physician : Treat symptomatically.

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Dry chemical, CO<sub>2</sub>, water spray or regular foam.
- Unsuitable extinguishing media : Do not spread spilled material with high-pressure water streams.
- Hazardous combustion products : Metal oxides  
Boron oxides  
Carbon oxides
- Related specific hazards : Do not allow run-off from fire fighting to enter drains or water courses.
- Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.  
Use a water spray to cool fully closed containers.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
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.
- Recommendations for fire-fighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.  
Use personal protective equipment.  
If it can be safely done, stop the leak.  
Do not touch or walk through the spilled material.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Try to prevent the material from entering drains or water courses.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and material for containment and cleaning up : Never return spills in original containers for re-use.  
Collect as much of the spill as possible with a suitable absorbent material.  
Pick up and transfer to properly labeled containers.  
Keep in suitable, closed containers for disposal.

### SECTION 7. HANDLING AND STORAGE

#### Handling

- Precautions for safe handling : Do not breathe vapors/dust.  
Avoid exposure - obtain special instructions before use.

# SAFETY DATA SHEET



## CARNIVAL®

Version 1.0      Revision Date: 13.02.2024      SDS Number: 50001104      Date of last issue: -  
Date of first issue: 13.02.2024

Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
To avoid spills during handling keep bottle on a metal tray.  
Dispose of rinse water in accordance with local and national regulations.

Operational and technical measures : Normal measures for preventive fire protection.

Contact prevention : Avoid contact with skin, eyes and clothing.  
Do not inhale aerosol.  
When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.

### Conditions for safe storage, including any incompatibilities

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Observe label precautions.  
Electrical installations / working materials must comply with the technological safety standards.

Incompatible substances and mixtures : Do not store near acids.

Further information on storage stability : No decomposition if stored and applied as directed.

### Specific end use(s)

Specific use(s) : Fertilizers

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible maximum concentration	Basis
boric acid	10043-35-3	TWA (Inhalable particulate matter)	2 mg/m <sup>3</sup> (Borate)	ACGIH
		STEL (Inhalable particulate matter)	6 mg/m <sup>3</sup> (Borate)	ACGIH
zinc oxide	1314-13-2	LPP (Fumes)	4,4 mg/m <sup>3</sup>	CL OEL

# SAFETY DATA SHEET



## CARNIVAL®

Version 1.0      Revision Date: 13.02.2024      SDS Number: 50001104      Date of last issue: -  
Date of first issue: 13.02.2024

		LPT (Fumes)	10 mg/m3	CL OEL
		TWA (Respirable particulate matter)	2 mg/m3	ACGIH
		STEL (Respirable particulate matter)	10 mg/m3	ACGIH

### Personal protective equipment

Eye/face protection : Eye wash bottle with pure water  
Tightly fitting safety goggles  
Face-shield

Skin protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hand protection  
Material : Protective gloves

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Protective measures : Plan first aid action before beginning work with this product.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Physical state : liquid

Color : yellow

Odor : characteristic

Odor Threshold : No data available

pH : 2,0 - 3,0  
Concentration: 100 %

Melting point/range : No data available

Boiling point/boiling range : No data available

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

Flash point : No data available

Evaporation rate : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Vapor density : No data available

Relative density : 1,41 - 1,51

Density : No data available

Solubility(ies)  
Water solubility : soluble

Partition coefficient: n-octanol/water : No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity  
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Explosive properties : No data available

Oxidizing properties : Non-oxidizing

### Other information

Bulk density : No data available

Molecular weight : Not applicable

Particle size : Not applicable

Self-ignition : No data available

---

## SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed.
Conditions to avoid	:	Avoid extreme temperatures. Avoid formation of aerosol.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers.
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

Harmful if swallowed.

#### Product:

Acute oral toxicity	:	Acute toxicity estimate: 773,87 mg/kg Method: Calculation method  Acute toxicity estimate: 933,53 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: > 10 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5.000 mg/kg Method: Calculation method

#### Components:

##### nitric acid, ammonium calcium salt:

Acute oral toxicity	:	LD50 (Rat, female): 300 - 2.000 mg/kg Method: OECD Test Guideline 423 Assessment: The component/mixture is moderately toxic after single ingestion.
Acute dermal toxicity	:	LD0 (Rat, male and female): > 2.000 mg/kg Method: OECD Test Guideline 402 Remarks: no mortality

##### magnesium nitrate:

Acute oral toxicity	:	LD50 (Rat, female): > 2.000 mg/kg Method: OECD Test Guideline 423
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5.000 mg/kg Method: OECD Test Guideline 402



# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

### **boric acid:**

- Acute oral toxicity : LD50 (Rat, male): > 2.600 mg/kg  
Method: OECD Test Guideline 401  
Remarks: no mortality
- Acute inhalation toxicity : LC0 (Rat, male and female): > 2,03 mg/l  
Exposure time: 5 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Remarks: no mortality
- Acute dermal toxicity : LD50 (Rabbit, male and female): > 2.000 mg/kg  
Remarks: no mortality

### **zinc oxide:**

- Acute oral toxicity : LD50 (Rat, male and female): > 2.000 mg/kg  
Method: OECD Test Guideline 423
- LD50 (Mouse, male and female): > 2.000 mg/kg  
Method: OECD Test Guideline 401  
Target Organs: Liver, Heart, spleen, Stomach, Pancreas  
Symptoms: Damage  
Remarks: mortality
- Acute inhalation toxicity : LC0 (Rat, male and female): > 1,79 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: EPA OPP 81 - 3  
Remarks: no mortality
- Acute dermal toxicity : LD50 Dermal (Rat, male and female): > 2.000 mg/kg  
Method: OECD Test Guideline 402

### **Skin corrosion/irritation**

Based on available data, the classification criteria are not met.

### **Product:**

- Assessment : Not classified as irritant  
Result : Mild skin irritant  
Remarks : May cause skin irritation and/or dermatitis.
- Remarks : Extremely corrosive and destructive to tissue.

### **Components:**

#### **nitric acid, ammonium calcium salt:**

- Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
Remarks : Based on data from a similar product.

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

### **magnesium nitrate:**

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation
Remarks	:	Based on data from similar materials

### **boric acid:**

Species	:	Rabbit
Result	:	No skin irritation

### **zinc oxide:**

Species	:	reconstructed human epidermis (RhE)
Method	:	OECD Test Guideline 431
Result	:	No skin irritation

### **Serious eye damage or eye irritation**

Causes serious eye damage.

#### **Product:**

Result	:	Risk of serious damage to eyes.
Remarks	:	May cause irreversible eye damage.
Remarks	:	May cause irreversible eye damage.

#### **Components:**

##### **nitric acid, ammonium calcium salt:**

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irreversible effects on the eye

Species	:	Bovine cornea
Method	:	OECD Test Guideline 437
Result	:	No eye irritation

##### **magnesium nitrate:**

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Eye irritation

##### **boric acid:**

Species	:	Rabbit
Result	:	slight irritation

##### **zinc oxide:**

Species	:	Rabbit
Method	:	OECD Test Guideline 405

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

Result : No eye irritation

### Respiratory or skin sensitization

#### Skin sensitization

Not classified due to lack of data.

#### Respiratory sensitization

Not classified due to lack of data.

#### Product:

Remarks : No data available

#### Components:

##### nitric acid, ammonium calcium salt:

Test Type	: Local lymph node assay (LLNA)
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: Does not cause skin sensitization.

##### magnesium nitrate:

Test Type	: Local lymph node assay (LLNA)
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: Does not cause skin sensitization.

##### boric acid:

Test Type	: Buehler Test
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: Does not cause skin sensitization.

##### zinc oxide:

Test Type	: Maximization Test
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: Does not cause skin sensitization.

Test Type	: Maximization Test
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: Substance is not considered to be potential skin sensitiser.

### Germ cell mutagenicity

Not classified due to lack of data.

#### Components:

##### nitric acid, ammonium calcium salt:

Genotoxicity in vitro : Test Type: reverse mutation assay

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

### **magnesium nitrate:**

Genotoxicity in vitro : Test Type: reverse mutation assay  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative  
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: Based on data from similar materials

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

### **boric acid:**

Genotoxicity in vitro : Test Type: reverse mutation assay  
Result: negative

Test Type: sister chromatid exchange assay  
Result: negative

Test Type: gene mutation test  
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse (male and female)  
Application Route: Oral  
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### **zinc oxide:**

Genotoxicity in vitro : Test Type: reverse mutation assay

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: equivocal

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster fibroblasts

Method: OECD Test Guideline 473

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes

Result: positive

Test Type: Micronucleus test

Test system: Human epithelioid cells

Method: OECD Test Guideline 487

Result: negative

Test Type: Micronucleus test

Test system: Human lymphocytes

Result: positive

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Mouse (male)  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: negative

### Carcinogenicity

Not classified due to lack of data.

### Components:

#### **boric acid:**

Species : Mouse, male and female  
Application Route : Oral  
Exposure time : 103 weeks  
Dose : 0, 446, 1150mg/kg/bw/day  
 : > 1.150 mg/kg bw/day  
Result : negative

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

#### **zinc oxide:**

Species : Mouse, male and female  
Application Route : Oral  
Exposure time : 1 year  
Dose : 4400, 22000 mg/l

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

NOAEL : > 22.000 mg/l  
Result : negative  
Remarks : Based on data from similar materials

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

### Reproductive toxicity

Not classified due to lack of data.

### Components:

#### **nitric acid, ammonium calcium salt:**

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Dose: 0, 250, 750, 1,500mg/kg/day  
General Toxicity Parent: NOAEL:  $\geq$  1.500 mg/kg bw/day  
Method: OECD Test Guideline 422  
Result: negative

Effects on fetal development : Test Type: reproductive and developmental toxicity study  
Species: Rat  
Application Route: Oral  
Dose: 0, 250, 750, 1,500mg/kg/day  
Duration of Single Treatment: 53 d  
General Toxicity Maternal: NOAEL:  $\geq$  1.500 mg/kg bw/day  
Developmental Toxicity: NOAEL:  $\geq$  1.500 mg/kg bw/day  
Method: OECD Test Guideline 422  
Result: negative  
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

#### **magnesium nitrate:**

Effects on fertility : Species: Rat, male and female  
Application Route: Oral  
Dose: 0, 250, 750, and 1,500 milligram per kilogram  
Duration of Single Treatment: 28 d  
General Toxicity Parent: NOAEL: > 1.500 mg/kg body weight  
Method: OECD Test Guideline 422  
Result: negative  
Remarks: Based on data from similar materials

Effects on fetal development : Species: Rat  
Application Route: Oral  
Dose: 0, 250, 750, and 1,500 milligram per kilogram  
Duration of Single Treatment: 28 d  
General Toxicity Maternal: NOAEL: > 1.500 mg/kg body weight  
Developmental Toxicity: NOAEL: > 1.500 mg/kg body weight  
Method: OECD Test Guideline 422

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

Result: negative  
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

### **boric acid:**

Effects on fertility : Test Type: Three-generation study  
Species: Rat, male and female  
Application Route: Oral  
Dose: 5.9, 17.5, 58.5(mgb)/kg/bw/d  
General Toxicity Parent: LOAEL: 58,5 mg/kg bw/day  
General Toxicity F1: LOAEL: 58,5 mg/kg bw/day  
General Toxicity F2: LOAEL: 58,5 mg/kg bw/day  
Result: negative

Effects on fetal development : Test Type: reproductive and developmental toxicity study  
Species: Rat  
Application Route: Oral  
Dose: 3.3, 6.3, 9.6, 13.3, 25mgb/kg  
General Toxicity Maternal: LOAEL: 13,3 mg/kg bw/day  
Embryo-fetal toxicity.: NOAEL: >= 12,9 mg/kg bw/day  
Method: OECD Test Guideline 414  
Result: negative

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

### **zinc oxide:**

Effects on fertility : Test Type: Two-generation study  
Species: Rat, male and female  
Application Route: Oral  
Dose: 7.5, 15, 30mg/kg bw/day  
Frequency of Treatment: 7 days/week  
General Toxicity Parent: LOAEL: 7,5 mg/kg body weight  
General Toxicity F1: LOAEL: 30 mg/kg body weight  
Method: OECD Test Guideline 416  
Result: negative  
Remarks: Based on data from similar materials

Test Type: one-generation reproductive toxicity  
Species: Rat, male  
Application Route: Oral  
Dose: 4,000 milligram per liter  
Frequency of Treatment: 32 daily  
General Toxicity Parent: LOAEL: 4.000 mg/l  
General Toxicity F1: LOAEL: 4.000 mg/l  
Symptoms: Reduced fertility  
Target Organs: male reproductive organs  
Result: positive  
Remarks: Based on data from similar materials

Effects on fetal development : Species: Rat

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

Application Route: inhalation (dust/mist/fume)  
Dose: .0003, 0.002, 0.008 milligram per liter  
Duration of Single Treatment: 14 d  
General Toxicity Maternal: LOAEC: 0,008 mg/L  
Developmental Toxicity: NOAEC: 0,008 mg/L  
Embryo-fetal toxicity.: NOAEC Mating/Fertility: 0,008 mg/L  
Method: OECD Test Guideline 414  
Result: negative

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

### Specific particular organ toxicity - single exposure

Not classified due to lack of data.

#### Components:

##### **nitric acid, ammonium calcium salt:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

### Specific particular organ toxicity - repeated exposure

Not classified due to lack of data.

#### Components:

##### **magnesium nitrate:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

##### **boric acid:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

##### **zinc oxide:**

Routes of exposure : Oral  
Target Organs : Central nervous system, Reproductive organs  
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

### Repeated dose toxicity

#### Components:

##### **nitric acid, ammonium calcium salt:**

Species : Rat, male and female  
NOAEL :  $\geq 1000$  mg/kg bw/day  
Application Route : Oral  
Exposure time : 28 d  
Dose : 50, 150, 1000 mg/kg bw  
Method : OECD Test Guideline 407



# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

### magnesium nitrate:

Species	: Rat, male and female
NOAEL	: > 1.500 mg/kg
Application Route	: Oral
Exposure time	: 28d
Dose	: 0, 250, 750, 1,500 mg/kg/day
Method	: OECD Test Guideline 422
Remarks	: Based on data from similar materials

### boric acid:

Species	: Rat, male and female
LOAEL	: 58.5 mg/kg bw/day
Application Route	: Oral - feed
Exposure time	: 2 years
Dose	: 0, 5.9, 17.5, 58.5mg/kg/bw/d

Species	: Rat, female
NOAEC	: 0,47 mg/l
Application Route	: inhalation (dust/mist/fume)
Dose	: .077, .175, .47 mg/l

### zinc oxide:

Species	: Rat, male and female
NOAEL	: 31,52 mg/kg
LOAEL	: 127,52 mg/kg
Application Route	: Oral
Exposure time	: 13 weeks
Dose	: 0, 31.52, 127.52 mg/kg
Method	: OECD Test Guideline 408
Target Organs	: Pancreas
Symptoms	: Necrosis
Remarks	: Based on data from similar materials

Species	: Mouse, male and female
NOEL	: 3000 ppm
Application Route	: Oral
Exposure time	: 13 weeks
Dose	: 0, 300, 3000, 30000 ppm
Method	: OECD Test Guideline 408
Remarks	: Based on data from similar materials

Species	: Rat, male
LOAEL	: 0,0045 mg/l
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 3 months
Dose	: 0.0003, 0.0015, 0.004mg/l
Method	: OECD Test Guideline 413
Target Organs	: Lungs
Remarks	: mortality

Species	: Rat, male and female
---------	------------------------

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

LOAEL	: 75 mg/kg bw/day
Application Route	: Dermal
Exposure time	: 28d
Dose	: 0, 75, 180, 360 mg/kg bw/day
Method	: OECD Test Guideline 410

### Inhalation hazard

Not classified due to lack of data.

### Experience with human exposure

#### Components:

##### **zinc oxide:**

Inhalation	: Symptoms: Fatigue, Sweating, bitter taste, chills, dry mouth, flu-like symptoms
Ingestion	: Symptoms: Gastrointestinal discomfort

### Further information

#### Product:

Remarks	: No data available
---------	---------------------

## SECTION 12. ECOLOGICAL INFORMATION

### Toxicity

#### Components:

##### **nitric acid, ammonium calcium salt:**

Toxicity to fish	: LC50 (Cyprinus carpio (Carp)): > 95 - 102 mg/l Exposure time: 48 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: EC50 ( Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 h Method: OECD Test Guideline 201  NOEC ( Pseudokirchneriella subcapitata (green algae)): 100 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to microorganisms	: EC50 (activated sludge): > 1.000 mg/l Exposure time: 180 min Method: OECD Test Guideline 209

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

Toxicity to fish (Chronic toxicity) : NOEC: 157 mg/l  
Exposure time: 30 d  
Species: Pimephales promelas (fathead minnow)  
Test Type: flow-through test  
Remarks: Based on data from similar materials

### **magnesium nitrate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

LC50 (Poecilia reticulata (guppy)): 1.378 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

LC50 (Cyprinus carpio (Carp)): 95 - 102 mg/l  
Exposure time: 48 h  
Test Type: semi-static test  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 39 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 ( diatoms): > 1.700 mg/l  
Exposure time: 10 d  
Test Type: static test  
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOEC: 58 mg/l  
Exposure time: 30 d  
Species: Pimephales promelas (fathead minnow)  
Test Type: flow-through test  
Remarks: Based on data from similar materials

NOEC: 157 mg/l  
Exposure time: 32 d  
Species: Pimephales promelas (fathead minnow)  
Test Type: flow-through test  
Remarks: Based on data from similar materials

### **boric acid:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 79,7 mg/l  
Exposure time: 96 h  
Test Type: static test  
Remarks: Based on data from similar materials

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

LC50 (Limanda limanda): 74 mg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : LC50 (Ceriodaphnia dubia (water flea)): 102 mg/l  
Exposure time: 48 h  
Test Type: static test

Toxicity to algae/aquatic plants : EC50 ( Pseudokirchneriella subcapitata (green algae)): 40,2 mg/l  
Exposure time: 74,5 h  
Method: OECD Test Guideline 201

NOEC ( Pseudokirchneriella subcapitata (green algae)): 17,5 mg/l  
Exposure time: 74,5 h  
Method: OECD Test Guideline 201

LOEC: 3,6 mg/l  
Exposure time: 10 d  
Test Type: semi-static test

Toxicity to microorganisms : EC50 (activated sludge): > 175 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

NOEC (activated sludge): 17,5 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity) : NOEC: 6,4 mg/l  
Exposure time: 34 d  
Species: Danio rerio (zebra fish)  
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 6,4 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test

Toxicity to soil dwelling organisms : LC50: > 175 mg/kg  
Exposure time: 14 d  
Species: Eisenia fetida (earthworms)  
Method: OECD Test Guideline 207

NOEC: >= 175 mg/kg  
Exposure time: 14 d  
Species: Eisenia fetida (earthworms)  
Method: OECD Test Guideline 207

**zinc oxide:**

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 1,55 mg/l  
Exposure time: 96 h  
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 0,76 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

LC50: 0,37 mg/l  
Exposure time: 96 h  
Test Type: static test

EC50: 0,14 mg/l  
Exposure time: 24 h  
Test Type: static test

EC50: 0,072 mg/l  
Exposure time: 96 h  
Test Type: static test

Toxicity to algae/aquatic plants : IC50 ( Pseudokirchneriella subcapitata (algae)): 0,044 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC ( Pseudokirchneriella subcapitata (algae)): 0,024 mg/l  
Exposure time: 3 d  
Method: OECD Test Guideline 201

IC50 ( Skeletonema costatum (marine diatom)): 1,23 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201

IC50: 3,28 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201

NOEC ( Dunaliella tertiolecta (marine algae)): 0,01 mg/l  
Exposure time: 4 d  
Test Type: static test

EC50 ( Dunaliella tertiolecta (marine algae)): 0,65 mg/l  
Exposure time: 4 d  
Test Type: static test

( Chlorella vulgaris (Fresh water algae)): 1,16 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

EC50 ( Anabaena flos-aquae (cyanobacterium)): 0,3 mg/l  
Exposure time: 96 h  
Test Type: static test

EC50: 0,69 mg/l  
Exposure time: 3 d

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

Test Type: static test

EC50 (Phaeodactylum tricornutum): 1,12 mg/l  
Exposure time: 24 h  
Test Type: static test

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

EC50 (Tetrahymena pyriformis): 7,1 mg/l  
Exposure time: 24 h  
Test Type: Growth inhibition

Toxicity to fish (Chronic toxicity) : NOEC: 0,440 mg/l  
Exposure time: 72 d  
Species: Oncorhynchus mykiss (rainbow trout)  
Test Type: flow-through test  
Remarks: Based on data from similar materials

NOEC: 0,026 mg/l  
Exposure time: 30 d  
Species: Jordanella floridae (flagfish)  
Method: OECD Test Guideline 210  
Remarks: Based on data from similar materials

NOEC: 0,530 mg/l  
Exposure time: 1.095 d  
Species: Salvelinus fontinalis (Brook trout)  
Test Type: flow-through test  
Remarks: Based on data from similar materials

NOEC: 0,056 mg/l  
Exposure time: 116 d  
Species: Salmo trutta (brown trout)  
Method: OECD Test Guideline 210  
Remarks: Based on data from similar materials

NOEC: 0,025 mg/l  
Exposure time: 27 d  
Species: Fish  
Test Type: semi-static test  
Remarks: Based on data from similar materials

NOEC: 0,078 mg/l  
Exposure time: 248 d  
Species: Pimephales promelas (fathead minnow)  
Test Type: flow-through test  
Remarks: Based on data from similar materials

NOEC: 0,050 mg/l

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

Exposure time: 155 d  
Species: Fish  
Test Type: flow-through test  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : LOEC: 0,125 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to soil dwelling organisms : NOEC: 750 mg/kg  
Exposure time: 21 d  
Species: Eisenia fetida (earthworms)

### Persistence and degradability

No data available

### Bioaccumulative potential

#### Product:

Bioaccumulation : Remarks: No data available

#### Components:

##### **boric acid:**

Bioaccumulation : Species: Fish  
Exposure time: 60 d  
Bioconcentration factor (BCF): < 0,1

Partition coefficient: n-octanol/water : log Pow: -1,09 (22 °C)

##### **zinc oxide:**

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)  
Exposure time: 14 d  
Bioconcentration factor (BCF): 2.060

### Mobility in soil

No data available

### Other adverse effects

#### Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life with long lasting effects.

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

### SECTION 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

- |   |   |   |
|---|---|---|
| Waste from residues                               | : | The product should not be allowed to enter drains, water courses or the soil.<br>Do not contaminate ponds, waterways or ditches with chemical or used container.<br>Send to a licensed waste management company.  |
| Contaminated packaging, and contaminated material | : | It is prohibited to reuse, bury, burn, or sell containers. Rinsable containers: Triple rinse containers of less than 20 liters and pressure rinse containers of 20 liters or more. Triple rinsing: Add water up to ¼ of the container's capacity, close and shake for 30 seconds. Pour the rinse water into the mixing tank, considering this volume of water within the recommended volume for mixing preparation. Perform this procedure three times. Pressure rinsing: Activate the pressure rinsing device for 30 seconds, considering the volume of water used as part of the recommended volume for mixing preparation. In both procedures, punctured the container on its base without damaging the label. In all cases, take the empty containers to collection points indicated by the local empty containers program. |

### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### UNRTDG

Not regulated as a dangerous good

##### IATA-DGR

Not regulated as a dangerous good

##### IMDG-Code

Not regulated as a dangerous good

#### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

#### Domestic regulation

##### NCh382

Not regulated as a dangerous good

#### Special precautions for user

- |         |   |  |
|---------|---|--|
| Remarks | : | Not classified as dangerous in the meaning of transport regulations. |
|---------|---|--|



# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

### SECTION 15. REGULATORY INFORMATION

#### National Regulations

Chile. Decree 190. Carcinogenic Substances, Hazardous Waste Management. : Not applicable

Decree 1358 - Establishment of rules governing the control measures of precursors and essential chemicals. : Not applicable

Resolution 408/16 Exempt, Approving List of Health Hazardous Substances : Not included in list of Article 3, item a)

#### Other regulations

NCh 2245:2021 Safety data sheet for chemical products - Content and order of sections

NCh 2190:2019 Land transport of dangerous goods - Hazard identification marks

NCh 382:2021 Dangerous Goods – Classification

Decree 57 of 2019, Regulation on Classification, Labeling, and Notification of Hazardous Chemicals and Mixtures

D.S. 148/03 Sanitary Regulation on hazardous wastes handling

D.S. 298/94 Regulation on transport of hazardous cargo on streets and roads

D.S. 594/99 Regulation on sanitary and environmental basic conditions at work places

#### International Regulations

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

TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory
AIIC	: All components are listed on the inventory, regulatory obligations/restrictions apply
DSL	: This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.  nitric acid, ammonium calcium salt
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: Not in compliance with the inventory
NZIoC	: Not in compliance with the inventory
TECI	: Not in compliance with the inventory

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

The receiver should verify the possible existence of legal regulations applicable to chemical.

### SECTION 16. OTHER INFORMATION

Revision Date : 13.02.2024

Date format : dd.mm.yyyy

#### Full text of H-Statements

##### Abbreviations and acronyms

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Ox. Sol.	: Oxidizing solids
Repr.	: Reproductive toxicity
STOT RE	: Specific target organ toxicity - repeated exposure
ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
CL OEL	: Chile. Regulation on basic sanitary and environmental conditions in the workplace
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
CL OEL / LPP	: Time Weighted Limit Value
CL OEL / LPT	: Short Term Limit Value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; 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; REACH (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Trans-

# SAFETY DATA SHEET



## CARNIVAL®

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	13.02.2024	50001104	Date of first issue: 13.02.2024

---

portation of Dangerous Goods; TECL - 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; WHMIS - Workplace Hazardous Materials Information System

### Disclaimer

FMC Corporation believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. You can contact FMC Corporation to insure that this document is the most current available from FMC Corporation. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the information provided herein. The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. The user is responsible for determining whether the product is fit for a particular purpose and suitable for the user's conditions and methods of use. Since the conditions and methods of use are beyond the control of FMC Corporation, FMC Corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

CL / EN