

# SAFETY DATA SHEET



## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

---

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

**Product name** Novaction 320 CS

#### Other means of identification

**Product code** 50002358

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

Use of the Sub-stance/Mixture : Can be used as insecticide only.

Recommended restrictions on use : Use as recommended by the label.

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

**Supplier Address** FMC CHEMICALS (PTY) LTD  
COMPANY REGISTRATION NUMBER: 1988/001451/07  
WEST END OFFICE PARK, BUILDING C  
CNR. WEST AVE & HALL STREET  
CENTURION, 0014

E-mail address: SDS-Info@fmc.com (E-Mail General Information)

#### 1.4 Emergency telephone

For leak, fire, spill or accident emergencies, call:  
South Africa: 0-800-983-611 (CHEMTREC)

Medical emergency:  
For any emergency or poisoning contact: Griffon Poison Information Centre (24 hrs) - +27-(0)-82-446-8946

---

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### **Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 4 H332: Harmful if inhaled.

Short-term (acute) aquatic hazard, Category 1 H400: Very toxic to aquatic life.

# SAFETY DATA SHEET



## Novaction 320 CS

Version 2.0      Revision Date: 08.06.2022      SDS Number: 50002358      Date of last issue: -  
Date of first issue: 08.06.2022

Long-term (chronic) aquatic hazard, Category 1

H410: Very toxic to aquatic life with long lasting effects.

### 2.2 Label elements

#### Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H332 Harmful if inhaled.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements :

#### Prevention:

P261 Avoid breathing mist or vapors.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.

#### Response:

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P391 Collect spillage.

#### Disposal:

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

#### Additional Labeling

EUH208 Contains malathion (ISO) [containing  $\leq 0,03$  % isomalathion], ethylenediamine.  
May produce an allergic reaction.

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 11.25 %

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
malathion (ISO) [containing $\leq 0,03$ %]	121-75-5	Acute Tox. 4; H302	$\geq 20$ - $< 25$

# SAFETY DATA SHEET



## Novaction 320 CS

Version 2.0      Revision Date: 08.06.2022      SDS Number: 50002358      Date of last issue: -  
Date of first issue: 08.06.2022

isomalathion]	204-497-7 015-041-00-X	Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 1,000 M-Factor (Chronic aquatic toxicity): 1,000	
Residues (petroleum), catalytic re- former fractionator, sulfonated, poly- mers with formaldehyde, sodium salts	68425-94-5	Eye Irrit. 2; H319 Aquatic Chronic 3; H412	$\geq 2.5 - < 10$
ethylenediamine	107-15-3 203-468-6 612-006-00-6	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 3; H311 Skin Corr. 1B; H314 Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1; H317 Aquatic Chronic 3; H412	$\geq 0.25 - < 1$

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

- General advice : Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.
- If inhaled : Consult a physician after significant exposure.  
If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : Wash off with soap and water.  
If symptoms persist, call a physician.  
Wash contaminated clothing before re-use.
- In case of eye contact : Flush eyes with water as a precaution.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.

## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

---

If swallowed : Keep respiratory tract clear.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.

**4.2 Most important symptoms and effects, both acute and delayed**

Risks : Harmful if inhaled.

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

Treatment : Treat symptomatically.

---

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

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.

**5.2 Special hazards arising from the substance or mixture**

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Thermal decomposition can lead to release of irritating gases and vapors.  
phosphorus oxides  
Carbon oxides  
Sulfur oxides

**5.3 Advice for firefighters**

Special protective equipment for fire-fighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

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.

Further information : Standard procedure for chemical fires.  
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.

## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

---

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : 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.  
Ensure adequate ventilation.

**6.2 Environmental precautions**

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.  
Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.

**6.3 Methods and material for containment and cleaning up**

Methods for cleaning up : Never return spills in original containers for re-use.  
Pick up and transfer to properly labeled containers.  
Collect as much of the spill as possible with a suitable absorbent material.

**6.4 Reference to other sections**

See sections: 7, 8, 11, 12 and 13.

---

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Advice on safe handling : Avoid formation of aerosol.  
Do not breathe vapors/dust.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Provide sufficient air exchange and/or exhaust in work rooms.  
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Hygiene measures : General industrial hygiene practice. 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.

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

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully re-sealed and kept upright to prevent leakage. Electrical installa-

# SAFETY DATA SHEET



## Novaction 320 CS

Version 2.0      Revision Date: 08.06.2022      SDS Number: 50002358      Date of last issue: -  
Date of first issue: 08.06.2022

tions / working materials must comply with the technological safety standards.

Advice on common storage : Do not store near acids.

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

### 7.3 Specific end use(s)

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
malathion (ISO) [containing ≤ 0,03 % isomalathion]	121-75-5	OEL-RL (inhalable fraction and vapour)	2 mg/m <sup>3</sup>	ZA OEL
Further information	danger of cutaneous absorption, Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents, denotes carcinogenicity, which is based on GHS categorisation, including category 1A, 1B			
ethylenediamine	107-15-3	OEL-RL	20 ppm	ZA OEL
Further information	Occupational Exposure Limits - Restricted Limits For Hazardous Chemical Agents			

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Routes of exposure	Potential health effects	Value
ethylenediamine	Workers	Inhalation	Long-term systemic effects	25 mg/m <sup>3</sup>
	Workers	Dermal	Long-term systemic effects	3.6 mg/kg
	Consumers	Inhalation	Long-term systemic effects	12.5 mg/m <sup>3</sup>
	Consumers	Oral	Long-term systemic effects	0.275 mg/kg

#### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
malathion (ISO) [containing ≤ 0,03 % isomalathion]	Fresh water	1.2
1,2,3-Propanetricarboxylic acid, 2-hydroxy-, trisodium salt, dihydrate	Fresh water	0.44 mg/l
	Sea water	0.044 mg/l
	Sewage treatment plant	1000 mg/l
	Fresh water sediment	34.6 mg/kg
	Sea sediment	34.6 mg/kg
ethylenediamine	Fresh water	0.016 mg/l
	Intermittent use/release	0.167 mg/l
	Sea water	0.002 mg/l

# SAFETY DATA SHEET



## Novaction 320 CS

Version 2.0      Revision Date: 08.06.2022      SDS Number: 50002358      Date of last issue: -  
Date of first issue: 08.06.2022

	Sewage treatment plant	0.500 mg/l
	Fresh water sediment	7.68 mg/kg
	Sea sediment	0.768 mg/kg

### 8.2 Exposure controls

#### Personal protective equipment

- Eye protection : Eye wash bottle with pure water  
Tightly fitting safety goggles
- Hand protection  
Material : Protective gloves
- Remarks : The suitability for a specific workplace should be discussed  
with the producers of the protective gloves.
- Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- 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

### 9.1 Information on basic physical and chemical properties

- Appearance : liquid
- Color : beige
- Odor : aromatic
- Odor Threshold : No data available
- pH : 4.8  
Concentration: 10 g/l
- Melting point/range : No data available
- Boiling point/boiling range : 95 °C
- 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

# SAFETY DATA SHEET



## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	1.08 (20 °C)
Density	:	No data available
Solubility(ies)		
Water solubility	:	dispersible
Partition coefficient: n-octanol/water	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	898 mPa.s (20 °C)
		362 mPa.s (40 °C)
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing

### 9.2 Other information

Molecular weight	:	Not applicable
Self-ignition	:	322 °C

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No decomposition if stored and applied as directed.

### 10.2 Chemical stability

No decomposition if stored and applied as directed.

### 10.3 Possibility of hazardous reactions

Hazardous reactions	:	No decomposition if stored and applied as directed.
---------------------	---	---

### 10.4 Conditions to avoid

Conditions to avoid	:	Avoid extreme temperatures. Avoid formation of aerosol.
---------------------	---	--

### 10.5 Incompatible materials

No data available



## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

Materials to avoid : Avoid strong acids, bases, and oxidizers.

**10.6 Hazardous decomposition products**

No data available

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity**

Harmful if inhaled.

**Product:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 420

Acute inhalation toxicity : LC50 (Rat): > 2.68 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): > 4,000 mg/kg

**Components:****malathion (ISO) [containing ≤ 0,03 % isomalathion]:**

Acute oral toxicity : LD50 (Rat): 1,857 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The component/mixture is moderately toxic after single ingestion.  
Remarks: Based on data from similar materials

LD50 (Rat): > 5,000 mg/kg  
Method: FIFRA 81.01

Acute inhalation toxicity : LC50 (Rat): > 5.02 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: EPA OPP 81 - 3  
Assessment: The component/mixture is minimally toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: FIFRA 81.02  
Assessment: The substance or mixture has no acute dermal toxicity

**Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

**ethylenediamine:**

# SAFETY DATA SHEET



## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

---

Acute oral toxicity : LD50 (Rat, male and female): 866 mg/kg  
Method: OECD Test Guideline 401

Acute toxicity estimate: 866 mg/kg  
Method: Calculation method

Acute inhalation toxicity : LC50 (Rat): 14.7 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor

Acute toxicity estimate: 14.7 mg/l  
Test atmosphere: vapor  
Method: Calculation method

Acute dermal toxicity : LD50 (Rabbit, male): 560 mg/kg  
Symptoms: Necrosis

Acute toxicity estimate: 560 mg/kg  
Method: Calculation method

### Skin corrosion/irritation

Not classified based on available information.

#### Product:

Assessment	: No skin irritation
Method	: OECD Test Guideline 404
Result	: No skin irritation

#### Components:

##### malathion (ISO) [containing $\leq 0,03$ % isomalathion]:

Method	: FIFRA 81.05
Result	: slight irritation

##### Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:

Remarks : No data available

##### ethylenediamine:

Species	: Rabbit
Result	: Corrosive after 3 minutes to 1 hour of exposure

### Serious eye damage/eye irritation

Not classified based on available information.

#### Product:

Assessment	: No eye irritation
Method	: OECD Test Guideline 405
Result	: No eye irritation

## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

---

**Components:****malathion (ISO) [containing  $\leq 0,03$  % isomalathion]:**

Method	: FIFRA 81.04
Result	: slight irritation

**Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:**

Result	: Eye irritation
--------	------------------

**ethylenediamine:**

Species	: Rabbit
Result	: Irreversible effects on the eye

**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Product:**

Assessment	: Not a skin sensitizer.
Method	: OECD Test Guideline 429
Result	: Not a skin sensitizer.

**Components:****malathion (ISO) [containing  $\leq 0,03$  % isomalathion]:**

Test Type	: Buehler Test
Method	: FIFRA 81.06
Result	: Does not cause skin sensitization.

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

Test Type	: Magnusson-Kligman test
Method	: OECD Test Guideline 406
Result	: May cause sensitization by skin contact.
Remarks	: Based on data from similar materials

**ethylenediamine:**

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Result	: May cause sensitization by skin contact.

Species	: Humans
Result	: Probability or evidence of low to moderate respiratory sensitization rate in humans

## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

---

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****malathion (ISO) [containing  $\leq 0,03$  % isomalathion]:**

Genotoxicity in vitro	:	Test Type: Ames test Result: negative  Test Type: In vitro mammalian cell gene mutation test Result: positive Remarks: Based on data from similar materials  Test Type: unscheduled DNA synthesis assay Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: chromosome aberration assay Species: Rat Result: negative Remarks: Based on data from similar materials  Test Type: unscheduled DNA synthesis assay Species: Rat Result: negative Remarks: Based on data from similar materials

**ethylenediamine:**

Genotoxicity in vitro	:	Test Type: Ames test Result: positive  Test Type: Ames test Result: negative  Test Type: Ames test Test system: TA100 Metabolic activation: Metabolic activation Result: positive  Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells Result: negative  Test Type: in vitro DNA damage and/or repair study Test system: Chinese hamster ovary cells Result: negative  Test Type: in vitro DNA damage and/or repair study Test system: rat hepatocytes Result: negative  Test Type: Chromosome aberration test in vitro Test system: Human lymphocytes
-----------------------	---	---

# SAFETY DATA SHEET



## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

---

Method: OECD Test Guideline 473

Result: negative

Genotoxicity in vivo : Test Type: Rodent Dominant Lethal Assay  
Species: Rat (male)  
Application Route: Oral  
Result: negative

Test Type: Sex-linked Recessive Lethal Test  
Species: Drosophila melanogaster (vinegar fly)  
Application Route: Oral  
Result: negative

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

### Carcinogenicity

Not classified based on available information.

#### Components:

##### **malathion (ISO) [containing $\leq 0,03$ % isomalathion]:**

Species : Rat  
Application Route : Ingestion  
Exposure time : 24 month(s)  
NOAEL : 6,000 ppm  
Result : positive

Remarks : Probably carcinogenic to humans (IARC 2A)

##### **ethylenediamine:**

Species : Rat  
Application Route : Oral  
Dose : 0.009, 0.045, 0.158 g EDA  
NOAEL : 9 mg/kg bw/day  
Method : OECD Test Guideline 453  
Result : negative  
Remarks : Based on data from similar materials

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

### Reproductive toxicity

Not classified based on available information.

#### Components:

##### **malathion (ISO) [containing $\leq 0,03$ % isomalathion]:**

Effects on fertility : Test Type: Two-generation study  
Species: Rat, male and female  
General Toxicity F1: NOAEL: 132 - 152 mg/kg bw/day  
Symptoms: Reduced offspring weight gain.

Effects on fetal development : Test Type: Embryo-fetal development

# SAFETY DATA SHEET



## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

Species: Rat  
General Toxicity Maternal: NOAEL: 400 mg/kg bw/day  
Teratogenicity: NOAEL: 800 mg/kg bw/day  
Result: No teratogenic effects.

Test Type: Embryo-fetal development  
Species: Rabbit  
General Toxicity Maternal: NOAEL: 25 mg/kg bw/day  
Teratogenicity: NOAEL: 25 mg/kg bw/day  
Result: No teratogenic effects.

Reproductive toxicity - Assessment : Animal testing showed no reproductive toxicity.

### **ethylenediamine:**

Effects on fertility : Test Type: Two-generation study  
Species: Rat  
Application Route: Oral  
Dose: 50, 150, 500 mg/kg bw/d  
General Toxicity Parent: NOAEL: 23 mg/kg body weight  
General Toxicity F1: NOAEL: 227 mg/kg body weight  
Method: OECD Test Guideline 416  
Result: negative

Effects on fetal development : Species: Rat  
Application Route: Oral  
Dose: 50, 250, 1000 mg/kg bw/d  
General Toxicity Maternal: LOAEL: 114 mg/kg body weight  
Embryo-fetal toxicity.: LOAEC F1: 454 mg/kg body weight  
Symptoms: Malformations were observed.

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

### **STOT-single exposure**

Not classified based on available information.

### **STOT-repeated exposure**

Not classified based on available information.

### **Components:**

#### **ethylenediamine:**

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

### **Repeated dose toxicity**

#### **Components:**

#### **malathion (ISO) [containing $\leq 0,03$ % isomalathion]:**

Species : Rat  
LOAEL : 34.4 mg/kg  
Application Route : Oral - feed

# SAFETY DATA SHEET



## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

Exposure time : 90 d  
Target Organs : Nervous system  
Symptoms : cholinesterase inhibition

### ethylenediamine:

Species : Rat  
NOAEL : 22 mg/kg  
LOAEL : 114 mg/kg  
Application Route : Oral  
Exposure time : 90 d  
Dose : 50, 260, 1040 mg/kg bw/d  
Method : OECD Test Guideline 408  
Symptoms : Liver effects

Species : Rat  
NOAEL : 48 mg/kg  
LOAEL : 107 mg/kg  
Application Route : inhalation (vapor)  
Test atmosphere : vapor  
Exposure time : 6 w  
Symptoms : Fatality

Species : Mouse  
NOAEL : 8.3 mg/kg  
Application Route : Dermal

### Aspiration toxicity

Not classified based on available information.

### Components:

#### malathion (ISO) [containing $\leq 0,03$ % isomalathion]:

The substance does not have properties associated with aspiration hazard potential.

### Experience with human exposure

### Components:

#### ethylenediamine:

Inhalation : Target Organs: Respiratory system  
Symptoms: respiratory sensitiser

Skin contact : Target Organs: Skin  
Symptoms: Sensitization

### Neurological effects

### Components:

#### malathion (ISO) [containing $\leq 0,03$ % isomalathion]:

Remarks : No neurotoxicity observed in animal studies.

# SAFETY DATA SHEET



## Novaction 320 CS

Version 2.0	Revision Date: 08.06.2022	SDS Number: 50002358	Date of last issue: - Date of first issue: 08.06.2022
----------------	------------------------------	-------------------------	--

### Further information

#### Product:

Remarks : No data available

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product:

Toxicity to fish	: LC50 (Poecilia reticulata (guppy)): 0.33 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia): 2.06 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: IC50 (Pseudokirchneriella subcapitata (algae)): 47.7 mg/l Exposure time: 72 h
Toxicity to soil dwelling organisms	: LC50: 723 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms)
Toxicity to terrestrial organisms	: LD50: 1,000 mg/kg Species: Colinus virginianus (Bobwhite quail)  LD50: 0.31 µg/bee Exposure time: 96 d Species: Apis mellifera (bees) Remarks: Contact  LD50: 0.55 µg/bee Exposure time: 96 d Species: Apis mellifera (bees) Remarks: Oral

#### Components:

##### **malathion (ISO) [containing ≤ 0,03 % isomalathion]:**

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 0.18 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 0.72 µg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: IC50 (Selenastrum capricornutum (green algae)): 4.06 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	: 1,000
Toxicity to fish (Chronic toxicity)	: NOEC: 0.021 mg/l Exposure time: 37 d



# SAFETY DATA SHEET



## Novaction 320 CS

Version 2.0	Revision Date: 08.06.2022	SDS Number: 50002358	Date of last issue: - Date of first issue: 08.06.2022
----------------	------------------------------	-------------------------	--

Species: *Oncorhynchus mykiss* (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.006 mg/l  
Exposure time: 21 d  
Species: *Daphnia magna* (Water flea)

M-Factor (Chronic aquatic toxicity) : 1,000

Toxicity to soil dwelling organisms : 613 mg/kg  
Exposure time: 14 d  
Species: *Eisenia fetida* (earthworms)

Toxicity to terrestrial organisms : LC50: 3,497 mg/kg  
Exposure time: 5 d  
Species: *Colinus virginianus* (Bobwhite quail)

LD50: 1,485 mg/kg  
Species: *Anas platyrhynchos* (Mallard duck)

LD50: 0.38 µg/bee  
Species: *Apis mellifera* (bees)

### **Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:**

Toxicity to fish : LC50 (Zebra fish): > 10 - 100 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (*Pseudokirchneriella subcapitata* (green algae)): > 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

EC10 (*Pseudokirchneriella subcapitata* (green algae)): > 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: > 10 - 100 mg/l  
Exposure time: 21 d  
Species: *Daphnia magna* (Water flea)  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials

### **ethylenediamine:**

# SAFETY DATA SHEET



## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

- |  |   |   |
|--|---|---|
| Toxicity to fish   | : | LC50 (Poecilia reticulata (guppy)): 640 mg/l<br>Exposure time: 96 h<br>Test Type: semi-static test<br>Method: Regulation (EC) No. 440/2008, Annex, C.1  |
| Toxicity to daphnia and other aquatic invertebrates                    | : | EC50 (Daphnia magna (Water flea)): 16.7 mg/l<br>Exposure time: 48 h<br>Test Type: static test<br>Method: Regulation (EC) No. 440/2008, Annex, C.2   |
| Toxicity to algae/aquatic plants                                       | : | EC50 (Pseudokirchneriella subcapitata (green algae)): 71 mg/l<br>Exposure time: 72 h<br>Test Type: static test<br>Method: Regulation (EC) No. 440/2008, Annex, C.3<br><br>NOEC (Pseudokirchneriella subcapitata (green algae)): 3.2 mg/l<br>Exposure time: 72 h<br>Test Type: static test<br>Method: Regulation (EC) No. 440/2008, Annex, C.3 |
| Toxicity to microorganisms   | : | EC10 (activated sludge): 0.5 mg/l<br>Exposure time: 2 h<br>Test Type: Respiration inhibition  |
| Toxicity to fish (Chronic toxicity)                                    | : | NOEC: > 10 mg/l<br>Exposure time: 28 d<br>Species: Gasterosteus aculeatus (threespine stickleback)<br>Test Type: semi-static test<br>Method: OECD Test Guideline 210  |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC: 0.160 mg/l<br>End point: reproduction<br>Exposure time: 21 d<br>Species: Daphnia magna (Water flea)<br>Test Type: semi-static test  |

### 12.2 Persistence and degradability

#### Components:

##### **malathion (ISO) [containing $\leq 0,03$ % isomalathion]:**

Biodegradability : Result: Not readily biodegradable.

##### **Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:**

Biodegradability : Result: Not readily biodegradable.  
Remarks: Based on data from similar materials

##### **ethylenediamine:**

Biodegradability : Result: Readily biodegradable.  
Method: Regulation (EC) No. 440/2008, Annex, C.4-E

## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

---

**12.3 Bioaccumulative potential****Components:****malathion (ISO) [containing ≤ 0,03 % isomalathion]:**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): 95  
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 2.75

**ethylenediamine:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: -7.02 (25 °C)  
pH: 4

log Pow: -4.42 (25 °C)  
pH: 7

log Pow: -3.23 (25 °C)  
pH: 9

log Pow: -1.62 (25 °C)  
pH: > 12

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment****Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Other adverse effects****Product:**

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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

## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

---

**SECTION 13: Disposal considerations****13.1 Waste treatment methods**

- |                        |   |  |
|------------------------|---|--|
| Product                | : | 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 | : | Empty remaining contents.<br>Dispose of as unused product.<br>Do not re-use empty containers.<br>Empty containers should be taken to an approved waste handling site for recycling or disposal.                  |

---

**SECTION 14: Transport information****14.1 UN number**

- |      |   |         |
|------|---|---------|
| IMDG | : | UN 3082 |
| IATA | : | UN 3082 |

**14.2 UN proper shipping name**

- |      |   |   |
|------|---|---|
| IMDG | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (malathion) |
| IATA | : | Environmentally hazardous substance, liquid, n.o.s. (malathion) |

**14.3 Transport hazard class(es)**

- |      |   |   |
|------|---|---|
| IMDG | : | 9 |
| IATA | : | 9 |

**14.4 Packing group**

- |  |                 |
|--|-----------------|
| IMDG                                     |                 |
| Packing group                            | : III           |
| Labels                                   | : 9             |
| EmS Code                                 | : F-A, S-F      |
| IATA (Cargo)                             |                 |
| Packing instruction (cargo aircraft)     | : 964           |
| Packing instruction (LQ)                 | : Y964          |
| Packing group                            | : III           |
| Labels                                   | : Miscellaneous |
| IATA (Passenger)                         |                 |
| Packing instruction (passenger aircraft) | : 964           |
| Packing instruction (LQ)                 | : Y964          |
| Packing group                            | : III           |

# SAFETY DATA SHEET



## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

Labels : Miscellaneous

### 14.5 Environmental hazards

#### IMDG

Marine pollutant : yes

### 14.6 Special precautions for user

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

### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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

TCSI	: Not in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
AIIC	: Not in compliance with the inventory
DSL	: This product contains the following components that are not on the Canadian DSL nor NDSL.
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: Not 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

### 15.2 Chemical Safety Assessment

## SECTION 16: Other information

#### Full text of H-Statements

H226 : Flammable liquid and vapor.

## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

H302	:	Harmful if swallowed.
H311	:	Toxic in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H332	:	Harmful if inhaled.
H334	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H412	:	Harmful to aquatic life with long lasting effects.

**Full text of other abbreviations**

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Resp. Sens.	:	Respiratory sensitization
Skin Corr.	:	Skin corrosion
Skin Sens.	:	Skin sensitization
ZA OEL	:	South Africa. The Regulations for Hazardous Chemical Agents, Occupational Exposure Limits
ZA OEL / OEL-RL	:	Occupational Exposure Limit Restricted limit - 8- hour exposure or equivalent (12 hour shifts)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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 - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet;

# SAFETY DATA SHEET



## Novaction 320 CS

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	08.06.2022	50002358	Date of first issue: 08.06.2022

SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; 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

Other information :

### Classification of the mixture:

Acute Tox. 4	H332
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

### Classification procedure:

Based on product data or assessment
Based on product data or assessment
Calculation method

### 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.

### Prepared by

FMC Corporation

FMC Logo - Trademark of FMC Corporation

© 2021 FMC Corporation. All Rights Reserved.

ZA / EN