

# DUOFERTIL TOP PHOS 36 PK

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

Reference number: PK21

Issue date: 6/15/2016 Revision date: 4/29/2024 Supersedes version of: 3/28/2023 Version: 2.2

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

#### 1.1. Product identifier

Product form : Mixture  
Product name : DUOFERTIL TOP PHOS 36 PK  
UFI : WWX2-7P5A-T50J-HUKE  
Product code : I001971  
Type of product : Fertilizer  
Product group : Trade product

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

##### 1.2.1. Relevant identified uses

Main use category : Professional use  
Use of the substance/mixture : Agriculture  
Function or use category : Fertilisers

Title	Use descriptors
Professional use : Fertilizer (Source : Chemical safety report)	SU1, PC12, PROC5, PROC8b, PROC19, ERC8b, ERC8e

Full text of use descriptors: see section 16

##### 1.2.2. Uses advised against

No additional information available

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

##### Distributor

Cartlis AgroSystems Ltd  
Kostava str. 75g  
1st floor  
0160 Tbilisi  
GEORGIA  
T +995 32 244 55 41, F +995 32 244 55 49  
[info@cartlis.ge](mailto:info@cartlis.ge), [www.cartlis.ge](http://www.cartlis.ge)

##### Manufacturer

TIMAC AGRO ITALIA SPA  
S.P.13 Montodine Gombito  
Loc. Cà Nova  
26010 Ripalta Arpina (CR)  
ITALIA  
T +39(0)373.669.111, F (+39) 0373669291  
[info-fds@roullier.com](mailto:info-fds@roullier.com), <http://www.it.timacagro.com>

#### 1.4. Emergency telephone number

Country/Area	Organisation/Company	Address	Emergency number	Comment
Americas	3E		+1-760-476-3962 (Access code : 333021)	(24/7)
Europe/Middle-East/Africa	3E		+1-760-476-3961 (Access code : 333021)	(24/7)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Serious eye damage/eye irritation, Category 1 H318  
Reproductive toxicity, Category 1B H360FD  
Hazardous to the aquatic environment – Chronic Hazard, Category 3 H412

Full text of H- and EUH-statements: see section 16

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### Adverse physicochemical, human health and environmental effects

No additional information available

## 2.2. Label elements

### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS05

GHS08

Signal word (CLP)

: Danger

Contains

: Single superphosphate complex; Superphosphates, concd; Disodium tetraborate pentahydrate, Borax pentahydrate,

Hazard statements (CLP)

: H318 - Causes serious eye damage.

H360FD - May damage fertility. May damage the unborn child.

H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements (CLP)

: P201 - Obtain special instructions before use.

P273 - Avoid release to the environment.

P280 - Wear eye protection, face protection, protective gloves.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

P310 - Immediately call a doctor, a POISON CENTER.

Extra phrases

: Restricted to professional users.

## 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Contains no PBT and/or vPvB substances  $\geq 0.1\%$  assessed in accordance with REACH Annex XIII

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

Component	
Substance(s) not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605	Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

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according to Regulation (EC) No. 1907/2006 (REACH)

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Single superphosphate complex	EC-No.: 938-989-4 REACH-no: 01-2119994289-16	≥ 3	Eye Dam. 1, H318
Superphosphates, concd	CAS-No.: 65996-95-4 EC-No.: 266-030-3 REACH-no: 01-2119493057-33	> 3	Eye Dam. 1, H318
Iron (II) sulfate (1:1) heptahydrate; sulfuric acid, iron(II) salt (1:1), heptahydrate; ferrous sulfate heptahydrate	CAS-No.: 7782-63-0 EC-No.: 231-753-5 EC Index-No.: 026-003-01-4	> 1 < 3	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319
Zinc sulphate monohydrate	CAS-No.: 7733-02-0 EC-No.: 231-793-3 EC Index-No.: 030-006-00-9 REACH-no: 01-2119474684-27	0.25 – 2.5	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Disodium tetraborate pentahydrate, Borax pentahydrate, substance listed as REACH Candidate (Disodium tetraborate, anhydrous)	CAS-No.: 12179-04-3 EC-No.: 215-540-4 EC Index-No.: 005-011-00-4 REACH-no: 01-2119490790-32	1 – 5	Eye Irrit. 2, H319 Repr. 1B, H360FD

#### Specific concentration limits:

Name	Product identifier	Specific concentration limits (%)
Iron (II) sulfate (1:1) heptahydrate; sulfuric acid, iron(II) salt (1:1), heptahydrate; ferrous sulfate heptahydrate	CAS-No.: 7782-63-0 EC-No.: 231-753-5 EC Index-No.: 026-003-01-4	(25 ≤ C < 100) Skin Irrit. 2, H315

Full text of H- and EUH-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Prompt treatment is essential to minimize damage. Get medical advice/attention if you feel unwell.
First-aid measures after inhalation	: Move to fresh air in case of accidental inhalation. Seek medical attention if ill effect develops.
First-aid measures after skin contact	: Wash with water and soap as a precaution. If case of redness or irritation, call a doctor.
First-aid measures after eye contact	: Wash immediately with plenty water (during 20 minutes), also under eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist immediately, even if there are no immediate symptoms. If possible show him this sheet. Failing this, show him the packaging or label.
First-aid measures after ingestion	: If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting without medical advice. Seek medical advice (show the label where possible).

### 4.2. Most important symptoms and effects, both acute and delayed

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

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

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### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media : water, carbon dioxide (CO<sub>2</sub>), powder and foam. Use extinguishing media appropriate for surrounding fire.

#### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable. Non oxidizing material according to EC criteria.  
Hazardous decomposition products in case of fire : On combustion or on thermal decomposition (pyrolysis) releases : Sulphur oxides. Phosphorus oxides. toxic and corrosive vapours. Ammonia.

#### 5.3. Advice for firefighters

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Complete protective clothing. EN 469. Self-contained breathing apparatus.  
Other information : Do not allow run-off from fire fighting to enter drains or water courses.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Evacuate area.

##### 6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.  
Emergency procedures : Do not get in eyes, on skin, or on clothing. Do not breathe dust. Evacuate unnecessary personnel. Mark the danger area. Mechanically ventilate the spillage area. Keep upwind. Only qualified personnel equipped with suitable protective equipment may intervene.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment.  
Emergency procedures : Ventilate area. Stop leak if safe to do so. Dike and contain spill.

#### 6.2. Environmental precautions

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

#### 6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.  
Methods for cleaning up : Clean up immediately by sweeping or vacuum. Minimise generation of dust. Collect up the product and place it in a spare container suitably labelled.  
Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

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

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Do not breathe dust. Use personal protective equipment as required. Avoid contact with eyes. Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.  
Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety practice.

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### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: The floor of the depot should be impermeable and designed to form a water-tight basin. Comply with applicable regulations.
Storage conditions	: Store in dry, cool, well-ventilated area. Protect from moisture. Keep out of reach of children.
Incompatible products	: Refer to the detailed list of incompatible materials in section 10 Stability/Reactivity.
Storage temperature	: 0 – 40 °C Store at ambient temperature
Heat and ignition sources	: Keep away from open flames, hot surfaces and sources of ignition.
Information on mixed storage	: Keep away from food, drink and animal feeding stuffs.
Special rules on packaging	: Keep only in original container.

### 7.3. Specific end use(s)

see section(s) : 1.2. Relevant identified uses of the substance or mixture and uses advised against).

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1 National occupational exposure and biological limit values

No additional information available

#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

#### 8.1.4. DNEL and PNEC

Single superphosphate complex	
<b>DNEL/DMEL (Workers)</b>	
Long-term - systemic effects, dermal	10 mg/kg bodyweight/day Repeated dose toxicity
Long-term - systemic effects, inhalation	7 mg/m <sup>3</sup> Repeated dose toxicity
<b>Superphosphates, concd (65996-95-4)</b>	
<b>DNEL/DMEL (Workers)</b>	
Long-term - systemic effects, dermal	17.4 mg/kg bodyweight/day Single superphosphates, superphosphates, concd
Long-term - systemic effects, inhalation	3.1 mg/m <sup>3</sup> Single superphosphates, superphosphates, concd
<b>DNEL/DMEL (General population)</b>	
Long-term - systemic effects, oral	2.1 mg/kg bodyweight/day Single superphosphates, superphosphates, concd
Long-term - systemic effects, inhalation	0.9 mg/m <sup>3</sup> Single superphosphates, superphosphates, concd
Long-term - systemic effects, dermal	10.4 mg/kg bodyweight/day Single superphosphates, superphosphates, concd
<b>PNEC (Water)</b>	
PNEC aqua (freshwater)	1.7 mg/l Single superphosphates, superphosphates, concd
PNEC aqua (marine water)	0.17 mg/l Single superphosphates, superphosphates, concd
PNEC aqua (intermittent, marine water)	17 mg/l Single superphosphates, superphosphates, concd
<b>PNEC (STP)</b>	
PNEC sewage treatment plant	10 mg/l Single superphosphates, superphosphates, concd

#### 8.1.5. Control banding

No additional information available

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### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

##### Appropriate engineering controls:

Ensure good ventilation of the work station. Local exhaust and general ventilation must be adequate to meet exposure standards.

#### 8.2.2. Personal protection equipment

##### Personal protective equipment:

Dust production: dust mask with filter type P2. Safety glasses.

##### Personal protective equipment symbol(s):



##### 8.2.2.1. Eye and face protection

##### Eye protection:

Safety glasses with side guards should be worn to prevent injury from airborne particles and/or other eye contact with this product. ISO 16321-1

Eye protection			
Type	Field of application	Characteristics	Standard
Safety glasses	Dust	With side shields	EN 166

##### 8.2.2.2. Skin protection

##### Skin and body protection:

Skin protection appropriate to the conditions of use should be provided

##### Hand protection:

In case of repeated or prolonged contact wear gloves. Chemical resistant gloves (according to European standard NF ISO 374-1 or equivalent)

Hand protection					
Type	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves, Reusable gloves	Nitrile rubber (NBR), Butyl rubber, Polyvinylchloride (PVC)				EN 374-3

##### Other skin protection

##### Materials for protective clothing:

Wear suitable protective clothing

##### 8.2.2.3. Respiratory protection

##### Respiratory protection:

Dust production: dust mask with filter type P2. EN 143

Respiratory protection			
Device	Filter type	Condition	Standard
Disposable half mask, Reusable half mask, Dust formation: dust mask	Type P2	Dust protection	EN 136, EN 140, EN 143

##### 8.2.2.4. Thermal hazards

No additional information available

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### 8.2.3. Environmental exposure controls

#### Environmental exposure controls:

Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems. Assure that emissions are compliant with all applicable air pollution control regulations. Comply with applicable regulations.

#### Other information:

See Section 7 : 7.1. Precautions for safe handling.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: brown.
Odour	: Not available
Odour threshold	: Not applicable
Melting point	: > 133 °C
Freezing point	: Not available
Boiling point	: Not applicable
Flammability	: In case of excessive dust production : Dust may form flammable and explosive mixture with air
Oxidising properties	: Non oxidizing material according to EC criteria.
Lower explosion limit	: Not applicable
Upper explosion limit	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
pH	: 3 – 5
pH solution concentration	: 10 % Water
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Solubility	: Water: 80 %
Partition coefficient n-octanol/water (Log Kow)	: Not applicable
Partition coefficient n-octanol/water (Log Pow)	: Not applicable
Vapour pressure	: Not determined
Vapour pressure at 50°C	: Not available
Density	: 1100 – 1300 kg/m <sup>3</sup>
Relative density	: Not available
Relative vapour density at 20°C	: Not applicable
Particle size	: Not available

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

#### 9.2.2. Other safety characteristics

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

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

### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

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### 10.4. Conditions to avoid

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

### 10.5. Incompatible materials

Alkalis. Strong acids.

### 10.6. Hazardous decomposition products

In case of fire: See Section 5.

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

#### Zinc sulphate monohydrate (7733-02-0)

LD50 oral rat	1710 mg/kg bodyweight (OECD 401 method)
LD50 dermal rat	> 2000 mg/kg (OECD 402 method)

#### Single superphosphate complex

LD50 oral rat	> 2000 mg/kg (OECD 423 method)
LD50 dermal rat	> 2000 mg/kg (OECD 402 method)
LC50 Inhalation - Rat	≥ 5 mg/l/4h (OECD Guideline 403 with diammonium hydrogenorthophosphate; EPA with calcium bis(dihydrogenorthophosphate))

#### Superphosphates, concd (65996-95-4)

LD50 dermal rat	≥ 5000 mg/kg (OECD Guideline 402 with diammonium hydrogenorthophosphate; EPA with calcium bis(dihydrogenorthophosphate))
LD50 dermal rabbit	≥ 2000 mg/kg (OECD Guideline 425 with diammonium hydrogenorthophosphate; EPA with calcium bis(dihydrogenorthophosphate))
LC50 Inhalation - Rat	≥ 5 mg/l/4h (OECD Guideline 403 with diammonium hydrogenorthophosphate; EPA with calcium bis(dihydrogenorthophosphate))

#### Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)

LD50 oral rat	3200 – 3400 mg/kg bodyweight U.S EPA FIFRA
LD50 dermal rabbit	> 2000 mg/kg bodyweight U.S EPA FIFRA
LC50 Inhalation - Rat	> 2 mg/l (OECD 403 method)

#### Iron (II) sulfate (1:1) heptahydrate; sulfuric acid, iron(II) salt (1:1), heptahydrate; ferrous sulfate heptahydrate (7782-63-0)

LD50 oral rat	500 mg/kg bodyweight (OECD 423 method)
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Skin corrosion/irritation	: Not classified (Based on available data, the classification criteria are not met) pH: 3 – 5
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation

#### Zinc sulphate monohydrate (7733-02-0)

pH	4 – 6
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Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)	
pH	9.3 3% @ 20°C
Serious eye damage/irritation	: Causes serious eye damage. pH: 3 – 5
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
Zinc sulphate monohydrate (7733-02-0)	
pH	4 – 6
Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)	
pH	9.3 3% @ 20°C
Respiratory or skin sensitisation	: Not classified (Based on available data, the classification criteria are not met)
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met)
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
Reproductive toxicity	: May damage fertility. May damage the unborn child.
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
Single superphosphate complex	
NOAEL (oral, rat, 90 days)	250 mg/kg bodyweight/day
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
Additional information	: No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation
DUOFERTIL TOP PHOS 36 PK	
Viscosity, kinematic	Not applicable
Single superphosphate complex	
Viscosity, kinematic	Solid
Superphosphates, concd (65996-95-4)	
Viscosity, kinematic	Not applicable

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### 11.2. Information on other hazards

#### 11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties : The substance/mixture has no endocrine disrupting properties.

#### 11.2.2. Other information

Other information : Mixture does not contain substance (s) classified as PBT or vPvB in concentrations above 0,1%.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - water : Harmful to aquatic life with long lasting effects.  
Hazardous to the aquatic environment, short-term (acute) : Not classified (Based on available data, the classification criteria are not met; No experimental study on the product is available. The information given is based on our knowledge of the components and the classification of the product is determined by calculation)  
Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.

#### Zinc sulphate monohydrate (7733-02-0)

LC50 - Fish [1]	Zn 0.169 mg/l Oncorhynchus mykiss (Rainbow trout)
NOEC chronic fish	0.199 mg/l
NOEC chronic crustacea	0.013 mg/l
NOEC chronic algae	0.0078 mg/l

#### Single superphosphate complex

LC50 - Fish [1]	116 mg/l DIN EN ISO 7346-1 (Brachydanio rerio (zebra-fish))
EC50 - Crustacea [1]	10.1 g/l NF EN ISO 6341 (daphnia, 48 Hours)
ErC50 algae	> 105000 mg/l Pseudokirchneriella subcapitata (NF EN ISO 8692)
NOEC (acute)	3.6 mg/l NF EN ISO 6341 (daphnia, 48 Hours)
NOEC chronic algae	10 g/l Pseudokirchneriella subcapitata, 72 Hours (NF EN ISO 8692)

#### Superphosphates, concd (65996-95-4)

LC50 - Fish [1]	85.9 mg/l
EC50 - Other aquatic organisms [2]	1790 mg/l

#### Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)

LC50 - Fish [1]	537 mg/l Pimephales promelas - K and al., 2010)
EC50 - Crustacea [1]	896 mg/l daphnia, (Gersich, 1984a)
ErC50 algae	270 mg/l Pseudokirchneriella subcapitata (Hansveit and Oldersma, 2000)

#### Iron (II) sulfate (1:1) heptahydrate; sulfuric acid, iron(II) salt (1:1), heptahydrate; ferrous sulfate heptahydrate (7782-63-0)

NOEC (chronic)	0.24 mg/l (Pimephales promelas, 12 month)
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### 12.2. Persistence and degradability

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Persistence and degradability	Not established.
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Zinc sulphate monohydrate (7733-02-0)	
Persistence and degradability	Not applicable (inorganic substance).
Single superphosphate complex	
Persistence and degradability	Not established.
Superphosphates, concd (65996-95-4)	
Persistence and degradability	Product is biodegradable.
Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)	
Persistence and degradability	Not established.
Iron (II) sulfate (1:1) heptahydrate; sulfuric acid, iron(II) salt (1:1), heptahydrate; ferrous sulfate heptahydrate (7782-63-0)	
Persistence and degradability	Not established.

### 12.3. Bioaccumulative potential

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Partition coefficient n-octanol/water (Log Pow)	Not applicable
Partition coefficient n-octanol/water (Log Kow)	Not applicable
Bioaccumulative potential	Not established.
Zinc sulphate monohydrate (7733-02-0)	
Bioaccumulative potential	Not relevant.
Single superphosphate complex	
Bioaccumulative potential	Low bioaccumulation potential. Data sources : Safety Data Sheet Supplier.
Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)	
Bioaccumulative potential	There is no bioaccumulation.
Iron (II) sulfate (1:1) heptahydrate; sulfuric acid, iron(II) salt (1:1), heptahydrate; ferrous sulfate heptahydrate (7782-63-0)	
Partition coefficient n-octanol/water (Log Pow)	No data available
Bioaccumulative potential	Bioaccumulation unlikely.

### 12.4. Mobility in soil

Zinc sulphate monohydrate (7733-02-0)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.2
Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)	
Ecology - soil	Soluble in water. Product readily filters into the soil.
Iron (II) sulfate (1:1) heptahydrate; sulfuric acid, iron(II) salt (1:1), heptahydrate; ferrous sulfate heptahydrate (7782-63-0)	
Mobility in soil	No data available

### 12.5. Results of PBT and vPvB assessment

DUOFERTIL TOP PHOS 36 PK	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

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Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	Disodium tetraborate pentahydrate, Borax pentahydrate, (12179-04-3)

### 12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties : The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %.

### 12.7. Other adverse effects

Other adverse effects : May cause eutrophication at very low concentration.  
Additional information : No other effects known

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional waste regulation : Disposal must be done according to official regulations.  
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
Product/Packaging disposal recommendations : Discharging into rivers and drains is forbidden.  
Additional information : Do not re-use empty containers.  
HP Code : HP4 - "Irritant – skin irritation and eye damage:" waste which on application can cause skin irritation or damage to the eye.  
HP10 - "Toxic for reproduction:" waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring.  
HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number or ID number</b>				
Not regulated for transport				
<b>14.2. UN proper shipping name</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.3. Transport hazard class(es)</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.4. Packing group</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
<b>14.5. Environmental hazards</b>				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

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### 14.6. Special precautions for user

#### Overland transport

Not regulated

#### Transport by sea

Not regulated

#### Air transport

Not regulated

#### Inland waterway transport

Not regulated

#### Rail transport

Not regulated

### 14.7. Maritime transport in bulk according to IMO instruments

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

Other information, restriction and prohibition regulations : All the constituents of this preparation are registered in the EINECS inventory or in the ELINCS list.

#### REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

#### REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

#### REACH Candidate List (SVHC)

Contains substance(s) listed on the REACH Candidate List in concentrations  $\geq 0.1\%$  or SCL: Disodium tetraborate, anhydrous (EC 215-540-4, CAS 12179-04-3)

#### PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

#### POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

#### Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

#### Dual-Use Regulation (428/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items.

#### Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

#### Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

#### 15.1.2. National regulations

Ensure all national/local regulations are observed

### 15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out

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For the following substances of this mixture a chemical safety assessment has been carried out:

Zinc sulphate monohydrate

Single superphosphate complex

Superphosphates, concd

Disodium tetraborate pentahydrate, Borax pentahydrate,

### SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Reason for no classification	Added	
	Reason for no classification	Added	
	Supersedes	Modified	
	Revision date	Modified	
4.1	First-aid measures general	Modified	
5.2	Fire hazard	Modified	
5.2	Hazardous decomposition products in case of fire	Modified	
5.3	Other information	Modified	
5.3	Protection during firefighting	Modified	
6.1	Protective equipment	Added	
6.1	Emergency procedures	Added	
6.1	Protective equipment	Added	
6.1	Emergency procedures	Added	
6.1	General measures	Modified	
6.2	Environmental precautions	Added	
6.3	Other information	Added	
6.3	Methods for cleaning up	Modified	
6.3	For containment	Added	
6.4	Reference to other sections (8, 13)	Modified	
7.1	Precautions for safe handling	Modified	
7.1	Hygiene measures	Modified	
7.2	Heat and ignition sources	Added	
7.2	Storage temperature	Added	
7.2	Storage area	Modified	
7.2	Prohibitions on mixed storage	Added	
7.2	Storage conditions	Added	
7.2	Technical measures	Added	
7.2	Incompatible materials	Removed	
7.2	Special rules on packaging	Added	
7.2	Incompatible products	Modified	
7.3	Specific end uses	Modified	

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Indication of changes			
Section	Changed item	Change	Comments
8.1	Additional information	Modified	
8.2	Respiratory protection	Modified	
8.2	Hand protection	Modified	
8.2	Eye protection	Modified	
8.2	Appropriate engineering controls	Added	
8.2	Other information	Modified	
8.2	Environmental exposure controls	Added	
9.1	Odour	Modified	
9.1	Colour	Modified	
9.1	Oxidising properties	Modified	
10.4	Conditions to avoid	Modified	
12.1	Ecology - general	Modified	
12.2	Persistence and degradability	Modified	
12.3	Bioaccumulative potential	Modified	
12.4	Ecology - soil	Removed	
12.6	Adverse effects on the environment caused by endocrine disrupting properties	Added	
13.1	Ecology - waste materials	Removed	
13.1	Waste disposal recommendations	Added	
13.1	HP Code	Added	
13.1	Additional information	Modified	
13.1	Waste treatment methods	Modified	
16	Abbreviations and acronyms	Added	

### Abbreviations and acronyms:

ATE	Acute Toxicity Estimate
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration

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### Abbreviations and acronyms:

OECD	Organisation for Economic Co-operation and Development
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
SDS	Safety Data Sheet
STP	Sewage treatment plant
vPvB	Very Persistent and Very Bioaccumulative

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

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

### Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H360FD	May damage fertility. May damage the unborn child.
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.
Repr. 1B	Reproductive toxicity, Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2

### Full text of use descriptors

ERC8b	Widespread use of reactive processing aid (no inclusion into or onto article, indoor)
ERC8e	Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)
PC12	Fertilizers
PROC19	Manual activities involving hand contact
PROC5	Mixing or blending in batch processes
PROC8b	Transfer of substance or mixture (charging and discharging) at dedicated facilities
SU1	Agriculture, forestry, fishery

### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Eye Dam. 1	H318	Calculation method
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### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Repr. 1B	H360FD	Calculation method
Aquatic Chronic 3	H412	Calculation method

Safety Data Sheet (SDS), EU

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