

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006



Solubor® DF

Version: 2.7
Date of last issue: 06.04.2023
Date of first issue: 24.03.2016

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

1.1 Product identifier

Trade name : Solubor® DF
UFI : D7Q5-U0DS-000Q-4U3T

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

Use of the Substance/Mixture : Fertiliser

1.3 Details of the supplier of the safety data sheet

Company : COMPO EXPERT GmbH
Krögerweg 10
D-48155 Münster
Telephone : +49 (0) 251 29 79 81 – 000
Telefax : +49 (0) 251 29 79 81 - 111
E-mail address of person responsible for the SDS : info@compo-expert.com

1.4 Emergency telephone number

GBK GmbH - Global Regulatory Compliance - 24h
Telephone: +49 (0) 6132 - 84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2 H319: Causes serious eye irritation.

Reproductive toxicity, Category 1B H360FD: May damage fertility. May damage the unborn child.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Solubor® DF



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Revision Date:
27.03.2024

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H360FD May damage fertility. May damage the unborn child. H319 Causes serious eye irritation.
Precautionary statements	:	P201 Obtain special instructions before use. Prevention: P280 Wear protective gloves/ eye protection/ face protection. Response: 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. Storage: P405 Store locked up. Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : trace elements

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Solubor® DF



Version: 2.7
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Revision Date:
27.03.2024

boric acid	11113-50-1 234-343-4 01-2119486683-25-XXXX	Repr. 1B; H360FD	<= 45
disodium tetraborate pentahydrate	12179-04-3 215-540-4 01-2119490790-32-XXXX	Repr. 1B; H360FD Eye Irrit. 2; H319	<= 35
disodium decaborate decahydrate	12631-71-9 234-522-7	Repr. 2; H361d	<= 20

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Take off immediately all contaminated clothing.
Wash contaminated clothing before re-use.
- If inhaled : Fresh air.
If symptoms persist, seek medical advice.
- In case of skin contact : Wash thoroughly with soap and water.
If symptoms persist, seek medical advice.
- In case of eye contact : Rinse thoroughly with plenty of water for at least 15 minutes
and consult a physician.
If symptoms persist, seek medical advice.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : No information available.

Solubor® DF

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Revision Date:
27.03.2024

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 : The product is not flammable.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : none

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : In case of combustion evolution of dangerous gases possible.

5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Further information : 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Avoid dust formation.
Keep away from sources of ignition - No smoking.
In case of involuntary exposition of the product contact producer or supplier.

6.2 Environmental precautions

Environmental precautions : Do not empty into drains.
Product should not reach open waters.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Ensure adequate ventilation.
Use mechanical handling equipment.
Sweep up or vacuum up spillage and collect in suitable container for disposal.
To clean the floor and all objects contaminated by this material, use plenty of water.

Solubor® DF

Version: 2.7
Date of last issue: 06.04.2023
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Revision Date:
27.03.2024

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Avoid dust formation.
Keep away from sources of ignition - No smoking.
- Advice on protection against fire and explosion : Dust can form an explosive mixture with air. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges.
- Hygiene measures : Keep away from food, drink and animal feedingstuffs. Take off immediately all contaminated clothing. 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 in a dry, cool and well-ventilated place.
- Further information on storage conditions : Protect from atmospheric humidity. Protect against water.
- Advice on common storage : Not relevant
- Storage class (TRGS 510) : 6.1D, Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

- Specific use(s) : Always read the label and product information before use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
boric acid	11113-50-1	TWA	2,6 mg/m ³	DE TRGS 900
		STEL	5,2 mg/m ³	DE TRGS 900
			0,5 mg/m ³	
disodium tetraborate	12179-04-3		3 mg/m ³	DE TRGS 900

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Solubor® DF



Version: 2.7
 Date of last issue: 06.04.2023
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Revision Date:
 27.03.2024

pentahydrate				
Peak-limit: excursion factor (category)	8;(II)			
Further information	Commission for dangerous substances, The threshold value is based on the element content of the corresponding metal., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
		AGW	0,5 mg/m ³ (Borate)	DE TRGS 900
Peak-limit: excursion factor (category)	2;(I)			
Further information	Commission for dangerous substances, The threshold value is based on the element content of the corresponding metal., When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child			
			1 mg/m ³	ACGIHTLV
		TWA	1 mg/m ³	GB EH40

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Solubor® DF	Workers, Consumers	Inhalation	Acute effects, Chronic effects	15,09 mg/m ³
	Workers, Consumers	Skin contact	Chronic effects	407,2 mg/kg
Remarks:	Exposure time: 1 d			
	Consumers	Ingestion	Acute effects, Chronic effects	1,02 mg/kg
Remarks:	Exposure time: 1 d			
	Workers	Skin contact	Chronic effects	205,4 mg/kg
Remarks:	Exposure time: 1 d			

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

Substance name	Environmental Compartment	Value
Solubor® DF		
Remarks:	This information is not available.	

Solubor® DF

Version: 2.7
Date of last issue: 06.04.2023
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Revision Date:
27.03.2024

8.2 Exposure controls

Engineering measures

Ensure thorough ventilation of stores and work areas.

Personal protective equipment

Eye protection : Wear suitable gloves and eye/face protection.

Hand protection

Remarks : For prolonged or repeated contact use protective gloves. Observe skin protection measures like preventiveskin protection, soil-related careful cleaning and application of creamy skin-care agents. The selection of suitable depends upon the material, and also upon the quality of the gloves. The degree of protection will vary from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : Not necessary if room is well-ventilated.
In case of insufficient ventilation, wear suitable respiratory equipment.
Short term filtering device: filter P2

Protective measures : Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

General advice : Do not empty into drains.

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Solubor® DF



Version: 2.7
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Revision Date:
27.03.2024

Product should not reach open waters.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: granular
Colour	: off-white
Odour	: odourless
pH	: 7,4, Concentration: 10 g/l (23 °C)
Melting point/range	: > 500 °C
Boiling point/boiling range	: Not applicable
Flash point	: The product is not flammable.
Evaporation rate	: Not applicable
Flammability (solid, gas)	: does not ignite
Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable
Relative vapour density	: Not applicable
Relative density	: Not applicable
Bulk density	: 600 - 650 kg/m ³
Solubility(ies)	
Water solubility	: ca. 60 g/l partly soluble (20 °C)
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No decomposition if stored and applied as directed.
Viscosity	
Viscosity, dynamic	: Not applicable

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Solubor® DF



Version: 2.7
Date of last issue: 06.04.2023
Date of first issue: 24.03.2016

Revision Date:
27.03.2024

Viscosity, kinematic	: Not applicable
Explosive properties	: Not explosive
Oxidizing properties	: Not considered an oxidizing substance

9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with reducing agents.

10.4 Conditions to avoid

Conditions to avoid : Avoid moisture.
Avoid dust formation.

10.5 Incompatible materials

Materials to avoid : Water
strong reducing agents
Alkali metals
alkaline-earth metal hydroxides

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): > 3.000 mg/kg
Remarks: information on:
similar borate chemicals

Acute inhalation toxicity : LC50 (Rat): > 2 mg/l

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Solubor® DF



Version: 2.7

Date of last issue: 06.04.2023

Date of first issue: 24.03.2016

Revision Date:

27.03.2024

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg

Components:

boric acid:

Acute oral toxicity : LD50 (Mouse): 3.450 mg/kg

LD50 (Rat): 2.660 mg/kg

Acute inhalation toxicity : LC50 (Rat): 2 mg/l

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2.000 mg/kg

disodium tetraborate pentahydrate:

Acute oral toxicity : LD50 (Rat): 3.200 - 3.400 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2,0 mg/l
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg

Skin corrosion/irritation

Product:

Remarks: No irritation, but during longer, repeated mechanical effects it can become red and easy red.

Components:

boric acid:

Species: Rabbit

Result: No skin irritation

disodium tetraborate pentahydrate:

Species: Rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Product:

Remarks: slight irritation

Components:

boric acid:

Species: Rabbit

Method: OECD Test Guideline 405

Result: No eye irritation

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Solubor® DF



Version: 2.7
Date of last issue: 06.04.2023
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Revision Date:
27.03.2024

disodium tetraborate pentahydrate:

Species: Rabbit
Assessment: Irritant
Result: Moderate eye irritation

Respiratory or skin sensitisation

Product:

Remarks: None known.

Components:

boric acid:

Method: OECD Test Guideline 406
Result: non-sensitizing

disodium tetraborate pentahydrate:

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

germ cell mutagenicity

Components:

boric acid:

Genotoxicity in vitro : Test Type: Mammalian cell gene mutation assay
Result: Mutagenicity tests revealed no genotoxic potential.
Remarks: In vitro tests did not show mutagenic effects

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show
mutagenic effects.

disodium tetraborate pentahydrate:

Germ cell mutagenicity-
Assessment : In vitro tests showed mutagenic effects

Carcinogenicity

Components:

boric acid:

Species: Rat
Application Route: Oral
Method: OECD Test Guideline 451
Remarks: Animal testing did not show any carcinogenic effects.

disodium tetraborate pentahydrate:

Carcinogenicity - : Carcinogenicity classification not possible from current data.

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Solubor® DF



Version: 2.7

Date of last issue: 06.04.2023

Date of first issue: 24.03.2016

Revision Date:

27.03.2024

Assessment

Reproductive toxicity

Components:

boric acid:

Effects on foetal development : Remarks: Animal ingestion studies in several species, at high doses, indicate that borates cause reproductive and developmental effects.

Reproductive toxicity - Assessment : May damage fertility. May damage the unborn child.

disodium tetraborate pentahydrate:

Reproductive toxicity - Assessment : In animal testing, risk of impaired fertility was shown only after administration of very high doses of this substance. May damage fertility. May damage the unborn child.

Aspiration hazard

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

11.2 Information on other hazards

Endocrine disrupting properties

No data available

Further information

No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (dab): 74 mg/l
Exposure time: 96 h

LC50 (Oncorhynchus mykiss (rainbow trout)): 88 mg/l
Exposure time: 24 h

LC50 (Oncorhynchus mykiss (rainbow trout)): 54 mg/l
Exposure time: 32 h

LC50 (Goldfish): 65 mg/l
Exposure time: 7 h

LC50 (Goldfish): 71 mg/l
Exposure time: 3 h

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006



Solubor® DF

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Revision Date:
27.03.2024

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna): 242 mg/l
Exposure time: 24 h

Toxicity to algae : EC10 (Desmodesmus subspicatus (green algae)): 24 mg/l
Exposure time: 96 h

Components:

disodium tetraborate pentahydrate:

Toxicity to fish : LC50 (dab): 74 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 242 mg/l
Exposure time: 24 h

Toxicity to algae : EC10 (Scenedesmus subspicatus): 24 mg/l
Exposure time: 96 h

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: The product works in the soil as fertilizer and is diminished in a few weeks.

Components:

boric acid:

Biodegradability : Remarks: Not applicable

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 4).

12.4 Mobility in soil

Product:

Mobility : Remarks: No data available

Components:

boric acid:

Mobility : Remarks: No data available

12.5 Results of PBT and vPvB assessment

Product:

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006



Solubor® DF

Version: 2.7
Date of last issue: 06.04.2023
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Revision Date:
27.03.2024

Assessment : Remarks: Not applicable

Components:

boric acid:

Assessment : Substance is not persistent, bioaccumulative, and toxic (PBT)..
Remarks: Not applicable

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Product:

Additional ecological information : Boron is an essential micronutrient for healthy growth of plants. However, it can be harmful to boron sensitive plants in higher quantities. Care should be taken to minimise the amount of borate product released to the environment except as part of a balanced plant nutrition programme preferably after soil and/or tissue analysis.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations.
Fertiliser
Check if agriculture use is possible.

Contaminated packaging : Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.
Packs that cannot be cleaned should be disposed of in the same manner as the contents.
Observe all local regulations.

SECTION 14: Transport information

14.1 UN number or ID number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006



Solubor® DF

Version: 2.7
Date of last issue: 06.04.2023
Date of first issue: 24.03.2016

Revision Date:
27.03.2024

14.4 Packing group

Segregation group : : (-)

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not relevant

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : contains disodium tetraborate pentahydrate

Water hazard class (Germany) : WGK 1 slightly hazardous to water

Other regulations : The product is subject to the supply restrictions of the Ordinance on the Prohibition of Chemicals.

15.2 Chemical safety assessment

Chemical Safety Assessments have been carried out for these substances.

SECTION 16: Other information

Full text of H-Statements

H319 : Causes serious eye irritation.
H360FD : May damage fertility. May damage the unborn child.
H361d : Suspected of damaging the unborn child.

Full text of other abbreviations

Eye Irrit. : Eye irritation
Repr. : Reproductive toxicity

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIC - 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);

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006

Solubor® DF



Version: 2.7

Date of last issue: 06.04.2023

Date of first issue: 24.03.2016

Revision Date:

27.03.2024

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; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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