SAFETY DATA SHEET

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

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

1.1 Product identifier

Product name:
SURFYNOL® DF-110 C

Chemical name:
Acetylenic diol in solvent

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

Identified uses: Industrial use

Uses advised against: None known.

1.3 Details of the supplier of the safety data sheet

Company Name	:	Evonik Operations GmbH Rellinghauser Str. 1-11 45128 Essen Germany
Telephone	:	+49 201 173 01
Fax	:	+49 201 173 3000
E-mail	:	productsafety-cs@evonik.com

1.4 Emergency telephone number:

24-Hour Health Emergency	:	+49 2365 49 2232 +49 2365 49 4423 (Fax)

National Poison Information Service (NPIS)
England, Scotland and Wales: NHS: 111

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has been classified according to the legislation in force.

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Health Hazards		
Skin irritation	Category 2	H315: Causes skin irritation.
Serious eye irritation	Category 2	H319: Causes serious eye irritation.
Environmental Hazards		
Chronic hazards to the aquatic environment	Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label Elements

Signal Words: Warning

Hazard Statement(s):
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H412: Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention:
P264: Wash face, hands and any exposed skin thoroughly after handling.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P362+P364: Take off contaminated clothing and wash it before reuse.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3 Other hazards

None known.

SECTION 3: Composition/information on ingredients

Chemical name:
Acetylenic diol in solvent

3.2 Mixtures

Chemical name	Concentration	CAS-No.	EC No.	UK-REACH Registration No.	REACH Registration No.	M-Factor:	Notes
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	10 - <25%	68227-33-8	269-348-0		01-2120054421-68	No data available.	

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
# This substance has workplace exposure limit(s).
This substance is listed as SVHC.

Classification

Chemical name	Classification	Notes

2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	Classification: Skin Irrit.: 2: H315; Eye Irrit.: 2: H319; Aquatic Chronic: 2: H411; Supplemental label information: None known.	None.

The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information: Immediately remove contaminated clothing.

Inhalation: fresh air supply, consult a doctor if feeling unwell.

Skin Contact: In case of contact with skin wash off with soap and water. If skin irritation persists, call a physician.

Eye contact: In case of contact with eyes rinse thoroughly with plenty of water. If symptoms persist, seek medical advice.

Ingestion: Thoroughly clean the mouth with water In case of discomfort: Supply with medical care.

Personal Protection for First-aid Responders: No data available.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat.

Hazards: No data available.

4.3 Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: foam, carbon dioxide, dry powder, water spray.

Unsuitable extinguishing media: High volume water jet.

5.2 Special hazards arising from the substance or mixture:

In the event of fire the following can be released: - carbon dioxide, carbon monoxide Under certain conditions of combustion traces of other toxic substances cannot be excluded

5.3 Advice for firefighters

Special fire fighting procedures: No specific precautions.

Special protective equipment for fire-fighters: Do not inhale explosion and/or combustion gases. Use self-contained breathing apparatus and wear protective suit

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Use personal protective equipment.

6.1.1 For non-emergency personnel: No data available.

6.1.2 For emergency responders: No data available.

6.2 Environmental Precautions: Do not allow to enter drains or waterways Prevent product from getting into subsoil/soil.

6.3 Methods and material for containment and cleaning up: Pick up with absorbent material (e.g. sand, sawdust, general-purpose binder). Dispose of absorbed material in accordance with the regulations.

6.4 Reference to other sections: For further information on exposure monitoring and disposal see sections 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures: No data available.

Local/Total ventilation: No data available.

Safe handling advice: Provide good ventilation of working area (local exhaust ventilation if necessary).Avoid contact with skin and eyes. Do not inhale gases/vapours/aerosols.

Contact avoidance measures: No data available.

7.2 Conditions for safe storage, including any incompatibilities

Safe storage conditions: Keep container tightly closed in a cool, well-ventilated place.Do not store together with oxidizing agents.

Safe packaging materials: No data available.

7.3 Specific end use(s): No further recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

DNEL-Values

Remarks: DNEL-Values

Critical component	Type	Route of Exposure	Health Warnings	Remarks
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	Workers	Dermal	Systemic, short-term; 3 mg/kg	Repeated dose toxicity
	General population	Dermal	Systemic, short-term; 1.5 mg/kg	Repeated dose toxicity

	General population	Oral	Systemic, short-term; 1.5 mg/kg	Repeated dose toxicity
	General population	Dermal	Systemic, long-term; 0.25 mg/kg	Repeated dose toxicity
	General population	Inhalation	Systemic, short-term; 0.64 mg/m3	Repeated dose toxicity
	General population	Oral	Systemic, long-term; 0.25 mg/kg	Repeated dose toxicity
	General population	Inhalation	Systemic, long-term; 0.11 mg/m3	Repeated dose toxicity
	General population	Eyes	Local effect;	Medium hazard (no threshold derived)
	Workers	Inhalation	Systemic, long-term; 1.76 mg/m3	Repeated dose toxicity
	Workers	Inhalation	Systemic, short-term; 5.28 mg/m3	Repeated dose toxicity
	Workers	Dermal	Systemic, long-term; 0.5 mg/kg	Repeated dose toxicity
	Workers	Eyes	Local effect;	Medium hazard (no threshold derived)

PNEC-Values

Remarks: PNEC-Values

Critical component	Environmental compartment	PNEC-Values	Remarks
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	Sewage treatment plant	7 mg/l	
	Aquatic (freshwater)	0.04 mg/l	
	Soil	0.028 mg/kg	
	Aquatic (marine water)	0.004 mg/l	
	Sediment (freshwater)	0.32 mg/kg	
	Sediment (marine water)	0.032 mg/kg	

8.2 Exposure controls

Appropriate Engineering Controls: No data available.

Individual protection measures, such as personal protective equipment

Eye/face protection: Safety glasses

Hand Protection: Additional Information: gloves made of chloroprene (CR, e.g. Neoprene), gloves made of nitril (NBR)

Skin and Body Protection: protective clothing

Respiratory Protection: in case of formation of vapours/aerosols: Short term: filter apparatus, combination filter A-P2

Hygiene measures: Wash hands before breaks and immediately after handling the product. When using do not eat, drink or smoke. Remove soiled or soaked clothing immediately.

Environmental Controls: The environmental regulations on the control and monitoring of environmental exposures are to be observed.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state: liquid

Form: liquid

Color: Pale yellow

Odor:	specific to the product
Odor Threshold:	not measured
Freezing point:	not measured
Boiling Point:	not measured
Flammability:	not measured
Upper/lower limit on flammability or explosive limits	
Explosive limit - upper:	not measured
Explosive limit - lower:	not measured
Flash Point:	> 100 °C
Auto-ignition temperature:	not measured
Decomposition Temperature:	not measured
pH:	6 - 8 at 25 °C Concentration: 100 g/l Concentration: 10 % in Water
Viscosity	
Dynamic viscosity:	53 mPa.s at 21 °C
Kinematic viscosity:	53 mm2/s at 21 °C , Method: calculated
Solubility(ies)	
Solubility in Water:	not measured
Solubility (other):	not measured
Partition coefficient (n-octanol/water):	not measured
Vapor pressure:	not measured
Relative density:	not measured
Density:	1 g/cm3 at 25 °C
Relative vapor density:	not measured

9.2 Other information

Explosive properties:	not measured
Oxidizing properties:	not oxidizing
Self-ignition:	not measured
Metal Corrosion:	Not corrosive to metals
Evaporation Rate:	not measured

SECTION 10: Stability and reactivity

10.1	**Reactivity:**	see section "Possibility of hazardous reactions".
10.2	**Chemical Stability:**	The product is stable under normal conditions.
10.3	**Possibility of hazardous reactions:**	No hazardous reactions with proper storage and handling
10.4	**Conditions to avoid:**	None with proper storage and handling.
10.5	**Incompatible Materials:**	Oxidizing agents.

10.6 Hazardous Decomposition Products: None with proper storage and handling.

SECTION 11: Toxicological information

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

Information on likely routes of exposure

Inhalation: Information on effects are given below.

Skin Contact: Information on effects are given below.

Eye contact: Information on effects are given below.

Ingestion: Information on effects are given below.

Acute toxicity (list all possible routes of exposure)

Oral

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	LD 50, Rat, Male, 12,900 mg/kg

Dermal

Product:	LD 50, ATEmix, > 5,000 mg/kg
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	LD 50, Rabbit, > 2,000 mg/kg

Inhalation

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	LC 50, Rat, 1 h, > 20.1 mg/l, Dust and mist LC 50, Rat, 4 h, > 5.25 mg/l, Dust and mist Not toxic after single exposure, Vapour, No data available.

Repeated dose toxicity

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Skin Corrosion/Irritation

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	Irritating., 16 CFR 1500.41, Rabbit

Serious Eye Damage/Eye Irritation

Product:	No data available.
Components:	

2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	Irritating., 16 CFR 1500.42, Rabbit

Respiratory or Skin Sensitization

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	Local Lymph Node Assay (LLNA), OECD 429, Mouse, Not a skin sensitizer.

Carcinogenicity

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Germ Cell Mutagenicity

No data available.

In vitro

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	Ames test, OECD 471: , negative Chromosomal aberration, OECD 473: , negative

In vivo

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Reproductive toxicity

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Specific Target Organ Toxicity - Single Exposure

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Aspiration Hazard

Product:	Not classified
Components:	

2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	Not applicable

11.2 Information on other hazards

Other information

Product: No data available.

SECTION 12: Ecological information

12.1 Toxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Components:

2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	LC 50, Oncorhynchus mykiss, 96 h, 6.3 mg/l NOEC, Oncorhynchus mykiss, 96 h, 2.7 mg/l

Aquatic Invertebrates

Product: No data available.

Components:

2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	EC 50, Daphnia magna, 48 h, 6.6 mg/l OECD 202

Toxicity to Aquatic Plants

Product: No data available.

Components:

2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): 44 mg/l (OECD 201)

Toxicity to microorganisms

Product: No data available.

Components:

2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Toxicity to soil dwelling organisms

Product: No data available.

Components:

2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Toxicity to terrestrial organisms

Product: No data available.

Components:

2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Aquatic Invertebrates

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Toxicity to Aquatic Plants

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	NOEC (Algae (Pseudokirchneriella subcapitata), 72 h): 25 mg/l (OECD 201)

Toxicity to microorganisms

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Toxicity to soil dwelling organisms

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Toxicity to terrestrial organisms

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

12.2 Persistence and Degradability

Biodegradation

Product:	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	3 %, 28 d, The product is not biodegradable.

12.3 Bioaccumulative potential

Bioconcentration Factor (BCF)

Product:	No data available.
Components:	

2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

Partition Coefficient n-octanol / water (log Kow)

Product:	not measured
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

12.4 Mobility in soil:

Product	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

12.5 Results of PBT and vPvB assessment:

Product	No data available.
Components:	
2,5,8,11-Tetramethyldodec-6-yne-5,8-diol	No data available.

12.6 Other adverse effects:

Other hazards

Product:	Do not allow to enter soil, waterways or waste water canal.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information:	No data available.
Disposal methods:	In accordance with local authority regulations, take to special waste incineration plant
Contaminated Packaging:	If empty contaminated containers are recycled or disposed of, the receiver must be informed about possible hazards.

SECTION 14: Transport information

14.1 UN/ID No.

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

14.4 Packing 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

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I: Not applicable

15.2 Chemical safety assessment: No chemical safety assessment was carried out for this product.

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

SECTION 16: Other information

Abbreviations and acronyms:

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; EIGA - European Industrial Gases Association; 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

Key literature references and sources for data: No data available.

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

Classification according to Regulation (EC) No 1272/2008 as amended.	**Classification procedure**
Skin irritation, Category 2	Calculation method
Serious eye irritation, Category 2	On basis of test data
Chronic hazards to the aquatic environment, Category 3	On basis of test data

Wording of the statements in section 2 and 3

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Training information: Comply with national laws regulating employee instruction.

Revision Information Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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