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

1.1. Product identifier

Trade name

BÜFA®-UK UP Firestop S 813

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

Use of the substance/mixture

Purpose of use: Raw substance formulas for manufacturing shaped parts from unsaturated polyester / vinyl ester resins.

Uses advised against

SU21 Consumer uses: Private households (= general public = consumers)

1.3. Details of the supplier of the safety data sheet

Address

BÜFA Composites UK Ltd. / BUFA House
Factory Lane
CO11 1NH Brantham, Manningtree

Telephone no.	+44 (0) 1206 390 400
Information provided by / telephone	Department product safety / +49 4402 975-415
E-Mail	produktsicherheit-bcs@buefa.de

1.4. Emergency telephone number

Giftzentrale Goettingen: +49 551 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Flam. Liq. 3	H226
Skin Irrit. 2	H315
Eye Irrit. 2	H319
Skin Sens. 1	H317
Muta. 1B	H340
Carc. 1B	H350
Repr. 2	H361d
STOT SE 3	H335
STOT RE 1	H372

The product is classified and labelled in accordance with Regulation (EC) No 1272/2008
For explanation of abbreviations see section 16.

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms



Signal word

Danger

Hazard statements

H226 Flammable liquid and vapour.

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H340	May cause genetic defects.
H350	May cause cancer.
H361d	Suspected of damaging the unborn child.
H335	May cause respiratory irritation.
H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

P210.9	Keep away from sparks, open flames and other ignition sources. No smoking.
P260.8	Do not breathe vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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.

Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains methyl methacrylate;reaction product: bisphenol-A-(epichlorhydrin);Neodecanoic acid, cobalt salt;2,2-bis(bromomethyl)propane-1,3-diol;styrene

Restricted to professional users

2.3. Other hazards

The product contains no PBT substances. The product contains no vPvB substances. This product does not contain a substance that has endocrine disrupting properties with respect to human. The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients

styrene

CAS No.	100-42-5				
EINECS no.	202-851-5				
Registration no.	01-2119457861-32-XXXX				
Concentration	>=	20	<	25	%
Flam. Liq. 3	H226				
Skin Irrit. 2	H315				
Acute Tox. 4	H332				
Eye Irrit. 2	H319				
STOT SE 3	H335				
STOT RE 1	H372	Organs: Ear; Route of exposure: inhalative			
Asp. Tox. 1	H304				
Repr. 2	H361d				
Aquatic Chronic 3	H412				
STOT RE 1	H372				

cATpE	inhalative, Dust/Mist	1,5	mg/l
cATpE	inhalative, Vapors	11	mg/l

Additional remarks:

CLP Regulation (EC) No 1272/2008, Annex VI, Note D

methyl methacrylate

CAS No.	80-62-6				
EINECS no.	201-297-1				
Registration no.	01-2119452498-28-XXXX				
Concentration	>=	1	<	10	%
Flam. Liq. 2	H225				

Skin Irrit. 2	H315
Skin Sens. 1	H317
STOT SE 3	H335

Additional remarks:
CLP Regulation (EC) No 1272/2008, Annex VI, Note D

triethyl phosphate

CAS No.	78-40-0				
EINECS no.	201-114-5				
Concentration	>=	1	<	10	%
Acute Tox. 4	H302				

cATpE	oral	500	mg/kg

2,2-bis(bromomethyl)propane-1,3-diol

CAS No.	3296-90-0				
EINECS no.	221-967-7				
Registration no.	01-2119931630-46				
Concentration	>=	1	<	10	%
Muta. 1B	H340				
Carc. 1B	H350				

Tris(2-chloro-1-methylethyl)phosphate

CAS No.	1244733-77-4				
EINECS no.	807-935-0				
Registration no.	01-2119486772-26-0000				
Concentration	>=	0,1	<	1	%
Acute Tox. 4	H302				
Carc. 2	H351				
Aquatic Chronic 3	H412				

reaction product: bisphenol-A-(epichlorhydrin)

CAS No.	25068-38-6				
EINECS no.	500-033-5				
Registration no.	01-2119456619-26				
Concentration	>=	0,1	<	1	%
Skin Irrit. 2	H315				
Eye Irrit. 2	H319				
Skin Sens. 1	H317				
Aquatic Chronic 2	H411				

Eye Irrit. 2	H319	>= 5 %
Skin Irrit. 2	H315	>= 5 %

Neodecanoic acid, cobalt salt

CAS No.	27253-31-2				
EINECS no.	248-373-0				
Registration no.	01-2119970733-31-0006				
Concentration	>=	0,1	<	1	%
Acute Tox. 4	H302				
Skin Sens. 1	H317				
Aquatic Chronic 3	H412				
STOT RE 1	H372				

Complete text of hazard statements in chapter 16

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In any case show the physician the Safety Data Sheet. Adhere to personal protective measures when giving first aid. Remove soiled or soaked clothing immediately, do not allow to dry.

After inhalation

Remove the casualty into fresh air and keep him calm. Irregular breathing/no breathing: artificial respiration. In the event of symptoms take medical treatment.

After skin contact

Wash off immediately with soap and water.

After eye contact

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Seek medical advice immediately. Remove contact lenses

After ingestion

Rinse mouth thoroughly with water. Summon a doctor immediately. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. If individual is drowsy or unconscious place in recovery position (on left side, with head down).

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

The following symptoms may occur: Headache, Dizziness, Nausea

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

Treat symptomatically

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Alcohol-resistant foam, Dry powder, Carbon dioxide

Non suitable extinguishing media

Full water jet

5.2. Special hazards arising from the substance or mixture

In case of combustion evolution of dangerous gases possible. In the event of fire the following can be released: Carbon monoxide (CO); Carbon dioxide (CO_2); dense black smoke; Hydrogen chloride (HCl); Chlorine (Cl_2); chlorine compounds; Hydrogen bromide (HBr); Bromine; Bromine compounds

5.3. Advice for firefighters

Use self-contained breathing apparatus.
Collect contaminated fire-fighting water separately, must not be discharged into the drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin, eyes and clothing. Use personal protective clothing. Keep away sources of ignition. Ensure adequate ventilation. Use breathing apparatus if exposed to vapours/dust/aerosol.

6.2. Environmental precautions

Do not allow to enter drains or waterways. Do not discharge into the subsoil/soil. Prevent spread over a wide area (e.g. by containment or oil barriers).

6.3. Methods and material for containment and cleaning up

Pick up with absorbent material (eg sand, kieselgur, acid binder, universal binder, sawdust). When picked up, treat material as prescribed under Section 13 "Disposal".

6.4. Reference to other sections

Information regarding Safe handling, see Section 7. Information regarding personal protective measures, see Section 8. Information regarding waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Provide good ventilation of working area (local exhaust ventilation if necessary). Observe the usual precautions for handling chemicals.
Keep away from sources of ignition - No smoking. Take action to prevent static discharges. Vapours can form an explosive mixture with air.

7.2. Conditions for safe storage, including any incompatibilities

Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep container tightly closed and dry in a cool, well-ventilated place. Protect from heat and direct sunlight.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Derived No/Minimal Effect Levels (DNEL/DMEL)

2,2-bis(bromomethyl)propane-1,3-diol

DNEL				
Conditions	Worker	Long term	inhalative	Systemic effects
Concentration	0,82	mg/m³		

methyl methacrylate

Reference substance	methyl methacrylate			
DNEL				
Conditions	Worker	Long term	inhalative	
Concentration	210	mg/m³		
DNEL				
Conditions	Worker	Long term	dermal	
Concentration	74,3	mg/m³		

reaction product: bisphenol-A-(epichlorhydrin)

Reference substance	reaction product: bisphenol-A-(epichlorhydrin)			
DNEL				
Conditions	Worker	Acute	dermal	Systemic effects
Concentration	8,33	mg/kg		
DNEL				
Conditions	Worker	Acute	inhalative	Systemic effects
Concentration	12,25	mg/m³		
DNEL				
Conditions	Worker	Long term	dermal	Systemic effects
Concentration	8,33	mg/kg		
DNEL				
Conditions	Worker	Long term	inhalative	Systemic effects
Concentration	12,25	mg/m³		

styrene

DNEL				
Conditions	Worker	Acute	inhalative	Systemic effects
Concentration	289	mg/m³		
DNEL				
Conditions	Worker	Long term	inhalative	Systemic effects
Concentration	85	mg/m³		

DNEL				
Conditions	Worker	Acute	inhalative	Local effects
Concentration	306	mg/m³		
DNEL				
Conditions	Worker	Long term	dermal	Systemic effects
Concentration	406	mg/kg/d		

Neodecanoic acid, cobalt salt

Reference substance	Neodecanoic acid, cobalt salt		
Conditions	Worker	Long term	Local effects
Concentration	0,273	mg/m³	

Predicted No Effect Concentration (PNEC)

2,2-bis(bromomethyl)propane-1,3-diol

Type of value	PNEC	
Type	Freshwater	
Concentration	0,037	mg/l
Type of value	PNEC	
Type	Saltwater	
Concentration	0,004	mg/l
Type of value	PNEC	
Type	Freshwater sediment	
Concentration	0,037	mg/kg
Type of value	PNEC	
Type	Marine sediment	
Concentration	0,004	mg/kg

8.2. Exposure controls

Appropriate engineering controls

Use only in well ventilated areas.
Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommendedor statutory limits.

General protective and hygiene measures

Provide good ventilation of working area (local exhaust ventilation if necessary). Personal protective equipment must comply with the Regulation (EC) No 2016/425 and the resulting CEN standards.

Respiratory protection

If workplace limits are exceeded, a respiratory protection approved for this particular job must be worn. Short term: filter apparatus, Filter A; Respiratory protection must comply with DIN EN 136 / DIN EN 140 / DIN EN 143 / DIN EN 149.

Hand protection

Chemical resistant gloves			
Appropriate Material	Butyl rubber		
Material thickness		0,7	mm
Breakthrough time	=	30	min

Eye protection

Tightly fitting safety glasses; Eye protection must comply with EN ISO 16321-1:2022.

Body protection

Clothing as usual in the chemical industry.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form liquid
Colour white
Odour of styrene

Melting point
Remarks Not applicable

Freezing point
Remarks Not applicable

Boiling point
Value 145 °C
Remarks Information refers to the main component.

Flammability
No data available

Explosion limits
Lower explosion limit 1,1 to 6,1 %(V)
Remarks Information refers to the main component.

Flash point
Value 31 °C
Method ISO 3679-B

Auto-ignition temperature
Value 490 °C
Remarks Information refers to the main component.

Thermal decomposition
Remarks No data available

Self Accelerating Decomposition / Polymerization Temperature (SADT/SAPT)
Remarks Not applicable

pH value
Remarks Not applicable

Solubility in other solvents
Value 320 mg/l
25 °C
Remarks Information refers to the main component.
Source Manufacturer's data

Octanol/water partition coefficient (log Pow)
Remarks No data available

Vapour pressure
Value 6,67 hPa
Temperature 20 °C
Remarks Information refers to the main component.

Density
Value 1,546 g/cm³
Temperature 20 °C
Method DIN EN ISO 2811-1

Vapour density
Remarks No data available

Particle characteristics
Remarks Not applicable

9.2. Other information

Efflux time
Value >= 59 s

Temperature	23	°C
Method	DIN EN ISO 2431 - 6 mm	

SECTION 10: Stability and reactivity

10.1. Reactivity
No hazardous reactions when stored and handled according to prescribed instructions.

10.2. Chemical stability
The product is stable.

10.3. Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Conditions to avoid
Protect from heat and direct sunlight.

Thermal decomposition

Remarks	No data available

10.5. Incompatible materials
Reactions with peroxides and other radical components.

10.6. Hazardous decomposition products
No hazardous decomposition products known.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity

ATE	>	10.000	mg/kg
Method	calculated value (Regulation (EC) No. 1272/2008)		

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

Acute oral toxicity (Components)

Tris(2-chloro-1-methylethyl)phosphate

Species	rat		
LD50		1500	mg/kg

Acute dermal toxicity

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

Acute dermal toxicity (Components)

Tris(2-chloro-1-methylethyl)phosphate

Species	rabbit		
	>	5000	mg/kg
Species	rat		
LD50	>	2000	mg/kg

Acute inhalational toxicity

ATE		50,39	mg/l
Administration/Form	Vapors		
Method	calculated value (Regulation (EC) No. 1272/2008)		
ATE		6,87	mg/l
Administration/Form	Dust/Mist		
Method	calculated value (Regulation (EC) No. 1272/2008)		

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

Acute inhalative toxicity (Components)

Tris(2-chloro-1-methylethyl)phosphate

Species	rat		
LC50	>	7	mg/l
Duration of exposure		4 h	

Skin corrosion/irritation

evaluation irritant
The classification criteria are met.

Serious eye damage/irritation

evaluation irritant
The classification criteria are met.

Sensitization

evaluation May cause sensitization by skin contact.
The classification criteria are met.

Mutagenicity

evaluation May cause genetic defects.
The classification criteria are met.

Mutagenicity

2,2-bis(bromomethyl)propane-1,3-diol

evaluation May cause genetic defects.
evaluation Information on genotoxicity in vitro available.
evaluation Information on genotoxicity in vivo available.

Reproductive toxicity

evaluation Suspected of damaging the unborn child.
The classification criteria are met.

Carcinogenicity

evaluation Can cause cancer.
The classification criteria are met.

Carcinogenicity

2,2-bis(bromomethyl)propane-1,3-diol

evaluation Can cause cancer.

Specific Target Organ Toxicity (STOT)

Single exposure

The classification criteria are met.
evaluation May cause respiratory irritation.

Repeated exposure

The classification criteria are met.
evaluation Causes damage to organs through prolonged or repeated exposure

Specific Target Organ Toxicity (STOT) (Components)

styrene

Repeated exposure

evaluation Causes damage to organs through prolonged or repeated exposure
Route of exposure inhalative
Organs: Ear

Aspiration hazard

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

11.2. Information on other hazards

Endocrine disrupting properties with respect to humans

The product does not contain a substance that has endocrine disrupting properties with respect to humans.

Other information

Inhalation of the vapours causes irritation of the respiratory tract and mucous membrane, headaches, nausea, giddiners, vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Fish toxicity

2,2-bis(bromomethyl)propane-1,3-diol

Species	rainbow trout (Oncorhynchus mykiss)				
LC50	>	100			mg/l
Duration of exposure		96	h		

methyl methacrylate

Species	rainbow trout (Oncorhynchus mykiss)				
LC50	>	79			mg/l
Duration of exposure		96	h		
Method	OECD 203				
Species	zebra fish (Brachydanio rerio)				
NOEC		9,4			mg/l
Method	OECD 210				

reaction product: bisphenol-A-(epichlorhydrin)

Species	rainbow trout (Oncorhynchus mykiss)				
LC50		2			mg/l
Duration of exposure		96	h		

styrene

LC/EC/IC50	>	1,0	to	10	mg/l

Tris(2-chloro-1-methylethyl)phosphate

Species	Fathead minnow (Pimephales promelas)				
LC50		51			mg/l
Duration of exposure		96	h		

Daphnia toxicity

2,2-bis(bromomethyl)propane-1,3-diol

Species	Daphnia magna				
EC50	>	100			mg/l
Duration of exposure		48	h		

methyl methacrylate

Species	Daphnia magna				
EC50		69			mg/l
Duration of exposure		48	h		
Method	OECD 202				
Species	Daphnia magna				
NOEC		37			mg/l
Duration of exposure		21	Days		
Method	OECD 202 Part 2				
Durchfluss					

reaction product: bisphenol-A-(epichlorhydrin)

Species	Daphnia magna				
EC50		1,8			mg/l
Duration of exposure		48	h		

styrene

Species	Daphnia magna				
LC/EC/IC50	>	1,0	to	10	mg/l

Algae toxicity

2,2-bis(bromomethyl)propane-1,3-diol

Species	Scenedesmus subspicatus				
EC50	=	37			mg/l
Duration of exposure		72	h		

methyl methacrylate

Species	Selenastrum capricornutum				
EC50	>	110			mg/l
Duration of exposure		72	h		
Method	OECD 201				

reaction product: bisphenol-A-(epichlorhydrin)

Species	Scenedesmus sp.				
ErC50		11			mg/l
Duration of exposure		72	h		
Method	static test				

styrene

LC/EC/IC50	>	1,0	to	10	mg/l

Bacteria toxicity

2,2-bis(bromomethyl)propane-1,3-diol

Species	activated sludge		
EC50	2100		mg/l
Duration of exposure	3	h	

methyl methacrylate

Species	Pseudomonas putida		
EC3	100		mg/l
Duration of exposure	16	h	

reaction product: bisphenol-A-(epichlorhydrin)

Species	Bacillus subtilis		
IC50	> 42,6		mg/l
Duration of exposure	18	h	

12.2. Persistence and degradability

For this subsection there is no ecotoxicological data available on the product as such.

Biodegradability

methyl methacrylate

Value	94		%
Duration of test	14	Days	
evaluation	readily degradable		
Method	OECD 301 C		

reaction product: bisphenol-A-(epichlorhydrin)

Value	12		%
Duration of test	28	Days	
Method	OECD 302 B		

styrene

evaluation	Readily biodegradable (according to OECD criteria)

12.3. Bioaccumulative potential

For this subsection there is no ecotoxicological data available on the product as such.

Octanol/water partition coefficient (log Pow)

Remarks	No data available

12.4. Mobility in soil

For this subsection there is no ecotoxicological data available on the product as such.

12.5. Results of PBT and vPvB assessment

Evaluation of persistance and bioaccumulation potential

The product contains no PBT substances
The product contains no vPvB substances.

12.6 Endocrine disrupting properties

Endocrine disrupting properties with respect to the envrionment

The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

For this subsection there is no ecotoxicological data available on the product as such.
Do not discharge into the drains/surface waters/groundwater.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

Allocation of a waste code number, according to the European Waste Catalogue (EWC), should be carried out in agreement with the regional waste disposal company.

Disposal recommendations for packaging

Packaging that cannot be cleaned should be disposed off as product waste.

SECTION 14: Transport information

	Land transport ADR/RID	Marine transport IMDG/GGVSee
14.1. UN number	1866	1866
14.2. UN proper shipping name	RESIN SOLUTION	RESIN SOLUTION
14.3. Transport hazard class(es)	3	3
14.4. Packing group	III	III
Label		
14.5. Environmental hazards	-	
Limited Quantity		5 l
Limited Quantity	5 l	
Transport category	3	
Tunnel restriction code	D/E	
Hazard id. no.	30	
EmS		F-E, S-E
Remarks	Viscous product: Transport according to paragraph 2.2.3.1.5 ADR/RID	Transport according to 2.3.2.5 of the IMDG Code

SECTION 15: Regulatory information

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

National regulations

Observe employment restrictions for young people.

Observe employment restrictions for child bearing mothers and nursing mothers.
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Other information

The product does not contain substances according to: Candidate List for inclusion in Annex XIV of Regulation (EC) No. 1907/2006 (REACH).

15.2. Chemical safety assessment

No information available

SECTION 16: Other information

Alterations/supplements: Alterations to the previous edition are marked with an asterisk (*) in the left-hand margin.

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

Flam. Liq. 3	H226	On basis of test data
Skin Irrit. 2	H315	Calculation method
Eye Irrit. 2	H319	Calculation method
Skin Sens. 1	H317	Calculation method
Muta. 1B	H340	Calculation method
Carc. 1B	H350	Calculation method
Repr. 2	H361d	Calculation method
STOT SE 3	H335	Calculation method
STOT RE 1	H372	Calculation method

Hazard statements listed in Chapter 2/3

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H350	May cause cancer.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

CLP categories listed in Chapter 2/3

Acute Tox. 4	Acute toxicity, Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 1B	Carcinogenicity, Category 1B
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2	Eye irritation, Category 2
Flam. Liq. 2	Flammable liquid, Category 2
Flam. Liq. 3	Flammable liquid, Category 3
Muta. 1B	Germ cell mutagenicity, Category 1B
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin irritation, Category 2
Skin Sens. 1	Skin sensitization, Category 1
STOT RE 1	Specific target organ toxicity - repeated exposure, Category 1
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

Abbreviations

ATE: Acute Toxicity Estimates
CAS: Chemical Abstracts Service
cATpE: Converted acute toxicity point estimate
EAK: Europäischer Abfallkatalog
EINECS: European Inventory of Existing Commercial Chemical Substances
PBT: Persistent, Bioaccumulative and Toxic
vPvB: Very persistent and very bioaccumulative
VOC: Volatile Organic Compound

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***
This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.