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

1.1. Product identifier

Name of product Flume Technik GS

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

Identified uses

Sector of uses [SU]
SU22 - Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Product categories [PC]
PC35 - Washing and cleaning products (including solvent based products)

Process categories [PROC]
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC13 - Treatment of articles by dipping and pouring

Environmental release categories [ERC]
ERC8a - Wide dispersive indoor use of processing aids in open systems

Uses advised against

Remark
Do not use for injecting or spraying.

Recommended intended purpose(s)
Gentle and brightening cleaning concentrate for gold jewellery including gemstones.

1.3. Details of the supplier of the safety data sheet

Manufacturer/distributor
Rudolf Flume Technik GmbH
Hachestraße 66, D-45127 Essen
Phone +49 (0)201 1899-0, Fax +49 (0)201 1899-100
E-Mail info@flume.de
Internet www.flume.de

Advice
Herr Rolandus: f.rolandus@flume.de
Phone +49 (0)201 1899-0
Fax +49 (0)201 1899-100

1.4. Emergency telephone number

Emergency advice
Herr Rolandus
Phone +49 (0)201 1899-0
This number is only available at office times.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Hazard classes and Hazard categories	Hazard Statements	Classification procedure

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

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
Eye Dam. 1	**H318**	**Calculation method.**
Skin Sens. 1	**H317**	**Calculation method.**

Hazard Statements

H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

2.2. Label elements

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

GHS05

GHS07

Signal word

Danger

Hazard Statements

H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

Precautionary Statements

P102	Keep out of reach of children.
P261	Avoid breathing mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302 + P352	IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a doctor.
P312	Call a POISON CENTER/doctor/if you feel unwell.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Hazardous ingredients for labeling

Alkylbenzenesulphonates, C10-13-alkylderivates, Na-salts, Laurylamine ethoxylated, morpholine, sodium 3-nitrobenzenesulphonate, Oleic acid monoethanolamide, ethoxylated

2.3. Other hazards

Skin Irrit. 3 H316: Causes mild skin irritation.
Acute Tox. 5 (dermal) H313: May be harmful in contact with skin.

Aquatic Acute 2 H401: Toxic to aquatic life.

Results of PBT and vPvB assessment

The product does not contain any PBT-/vPvB-substances according to the recipe.

SECTION 3: Composition/ information on ingredients

3.1. Substances
not applicable

3.2. Mixtures
Description
Aqueous concentrate with anionic and nonionic surfactants, solvent, complexing agent, carbonates, desoxidizing brightening agents and odour.

Hazardous ingredients

CAS No	EC No	Name	[% weight]	Classification according to Regulation (EC) No 1272/2008 [CLP/ GHS]
68411-30-3	270-115-0	Alkylbenzenesulphonates, C10-13-alkylderivates, Na-salts	< 5	Acute Tox. 4, H302 / Skin Irrit. 2, H315 / Eye Dam. 1, H318 / Aquatic Chronic 3, H412
31017-83-1	931-964-9	Laurylamine ethoxylated	< 5	Acute Tox. 4, H302 / Eye Dam. 1, H318 / Aquatic Acute 1, H400 M=1 / Aquatic Chronic 3, H412
497-19-8	207-838-8	sodium carbonate	< 5	Eye Irrit. 2, H319
110-91-8	203-815-1	morpholine	5 - 15	Flam. Liq. 3, H226 / Acute Tox. 4, H332 / Acute Tox. 3, H311 / Acute Tox. 4, H302 / Skin Corr. 1A, H314 / Eye Dam. 1, H318
127-68-4	204-857-3	sodium 3-nitrobenzenesulphonate	< 5	Eye Irrit. 2, H319 / Skin Sens. 1, H317
26027-37-2		Oleic acid monoethanolamide, ethoxylated	< 5	Skin Corr. 1B, H314 / Eye Dam. 1, H318
68155-07-7	931-329-6	Amides, C8-18 (even numbered) and C18-unsatd., N,N-bis(hydroxyethyl)	< 1	Skin Irrit. 2, H315 / Eye Dam. 1, H318 / Aquatic Chronic 2, H411

REACH

CAS No	Name	REACH registration number
68411-30-3	Alkylbenzenesulphonates, C10-13-alkylderivates, Na-salts	01-2119489428-22
31017-83-1	Laurylamine ethoxylated	Not relevant (polymer).
497-19-8	sodium carbonate	01-2119485498-19
110-91-8	morpholine	01-2119496057-30
127-68-4	sodium 3-nitrobenzenesulphonate	Not yet available from supplier.
26027-37-2	Oleic acid monoethanolamide, ethoxylated	Not relevant (polymer).
68155-07-7	Amides, C8-18 (even numbered) and C18-unsatd., N,N-bis(hydroxyethyl)	Not yet available from supplier.

Additional advice
Aqueous cleaning concentrate for gentle cleaning and brightening of gold jewelry with and without ultrasonics.
Ingredients according to Annex VII, A, EC-Regulation 648/2004 (detergents): <5% anionic surfactants, 5-15% nonionic surfactants, perfumes, 2-Bromo-2-nitropropane-1,3-diol (~9 ppm).

SECTION 4: First aid measures

4.1. Description of first aid measures
General information
If threatening unconsciousness,position and transport in recovery position
Remove contaminated clothing immediately and dispose it safely.
Adhere to personal protective measures when giving first aid.

In case of inhalation
Ensure of fresh air.
In the event of symptoms refer for medical treatment.

In case of skin contact
In case of contact with skin wash off immediately with plenty of water.
Consult a doctor if skin irritation persists.

Get medical advice/attention if you feel unwell.

In case of eye contact
In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice.

In case of ingestion
Do not induce vomiting.
Medical treatment.
If swallowed seek medical advice immediately and show the doctor packing or label.
Immediately rinse out mouth and give plenty of water to drink.

4.2. Most important symptoms and effects, both acute and delayed
Physician's information / possible symptoms
No further informations available.

4.3. Indication of any immediate medical attention and special treatment needed
Treatment (Advice to doctor)
No further informations available.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media
water
Alcohol-resistant foam
Dry powder
Carbon dioxide

5.2. Special hazards arising from the substance or mixture
Risk of formation of toxic pyrolyse products.
In case of fire formation of dangerous gases possible.
Nitrogen oxides (NOx)
Carbon monoxide (CO)
Carbon dioxide (CO_2)

5.3. Advice for firefighters
Special protective equipment for fire-fighters
Do not inhale explosion and/or combustion gases.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
For non-emergency personnel
Ensure adequate ventilation.
Use personal protective clothing.
High risk of slipping due to leakage/spillage of product.

For emergency responders
Ensure adequate ventilation.
Use personal protective clothing.
Use personal protection.
Use breathing apparatus if exposed to vapours/dust/aerosol.
Forms slippery surfaces with water.
High risk of slipping due to leakage/spillage of product.

6.2. Environmental precautions
Do not discharge into the drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up
Take up with absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).
Flush away residues with water.
After taking up the material dispose according to regulation.

6.4. Reference to other sections
Informations for safe handling see chapter 7.
Informations for personal protective equipment see chapter 8.

! SECTION 7: Handling and storage

7.1. Precautions for safe handling
Advice on safe handling
Avoid formation of aerosols.
Care for thoroughly room ventilation, if necessary use in well ventilated area with local exhaust ventilation at workplace.
Open and handle container with care!
Take the usual precautions when handling with chemicals.

General protective measures
Avoid contact with eyes and skin
Do not inhale vapours/aerosols.

Hygiene measures
Provide washing facilities at place of work.
Remove soiled or soaked clothing immediately.
Keep away from food and drink.
Wash hands before breaks and after work.

Advice on protection against fire and explosion
No special measures necessary.

7.2. Conditions for safe storage, including any incompatibilities
Requirements for storage rooms and vessels
No special measures required.

Advice on storage compatibility
Do not store together with oxidizing agents.

! **Further information on storage conditions**
Keep locked up, out of reach of children
Protect from heat and direct solar radiation.
Keep container dry, tightly closed and store at cool and aired place.
Do not keep at temperatures below 5°C.
Do not keep at temperatures above 30°C.

! **Information on storage stability**
Storage time: 3 years.

7.3. Specific end use(s)
Recommendation(s) for intended use
see section 8.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Indicative occupational exposure limit values (91/322/EEC, 2000/39/EC, 2004/37/EC, 2006/15/EC or 2009/161/EU)

CAS No	Name	Code	[mg/m3]	[ppm]	Remark
110-91-8	morpholine	8 hours	36	10	
		Short-term	72	20	

DNEL-/PNEC-values
DNEL worker

CAS No	Substance name	Value	Code	Remark
110-91-8	morpholine	1,04 mg/kg	DNEL long-term dermal (systemic)	
		36 mg/m3	DNEL long-term inhalative (local)	
		91 mg/m3	DNEL long-term inhalative (systemic)	
497-19-8	sodium carbonate	10 mg/m3	DNEL long-term inhalative (local)	
68411-30-3	Alkylbenzenesulphonates, C10-13-alkylderivates, Na-salts	85 mg/kg bw/day	DNEL long-term dermal (systemic)	

PNEC

CAS No	Substance name	Value	Code	Remark
110-91-8	morpholine	10 mg/l	PNEC sewage treatment plant (STP)	
		0,163 mg/l	PNEC aquatic, freshwater	
68155-07-7	Amides, C8-18 (even numbered) and C18-unsatd., N,N-bis(hydroxyethyl)	830 mg/l	PNEC sewage treatment plant (STP)	
		0,007 mg/l	PNEC aquatic, freshwater	
68411-30-3	Alkylbenzenesulphonates, C10-13-alkylderivates, Na-salts	0,268 mg/l	PNEC aquatic, freshwater	
		3,43 mg/l	PNEC sewage treatment plant (STP)	

Additional advice

8.2. Exposure controls

Respiratory protection
Breathing apparatus in the event of aerosol or mist formation.
Breathing apparatus in the event of high concentrations.
Short term: filter apparatus, combination filter A-P2

Hand protection
chemical-resistant gloves
Glove material specification [make/type, thickness, permeation time/life]: Butyl, 0,5mm, >=8h.

Eye protection
tightly fitting goggles

Other protection measures
Light protective clothing.

Limitation and surveillance of the environment
Avoid penetration into the subsoil/soil.
Do not discharge into surface waters.

Appropriate engineering controls
Technical exhaustion for long-term expositions or higher bath temperatures.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Colour	Odour
liquid	yellowish - brown	mild

Odour threshold
morpholine: 0.035 - 0.49 mg/m3 (0.01 - 0.14 ppm).

Important health, safety and environmental information

	Value	Temperature	at	Method	Remark
pH value	12	20 °C			
starts to boil	>= 100 °C				
solidifying range	-5 °C				
Flash point	> 65 °C			DIN EN ISO 13736	Does not maintain the combustion.
Flammable (solid)	not applicable				
Flammability (gas)	not applicable				
Ignition temperature	255 °C				Value of morpholine.
Self ignition temperature					not spontaneously flammable
Lower explosion limit	1,4 Vol-%				Value of morpholine.
Upper explosion limit	13,1 Vol-%				Value of morpholine.
Vapour pressure	24 - 34 hPa	20 °C			
Relative density	1,075 g/cm3	20 °C			
Vapour density	3				Value of morpholine.
Solubility in water					miscible
Solubility/other	not determined				
Partition coefficient n-octanol/water (log P O/W)	-0,84				Value of morpholine.
Decomposition temperature	>= 100 °C				
Viscosity	not determined				

	Value	Temperature	at	Method	Remark
Solvent content	5 - 15 Gew-%				

Vapourisation rate
Water: 0.36 (ASTM D3539).
morpholine: ~0.61 (ASTM D3539) / 26 (DIN 53170) .

Oxidising properties
no

Explosive properties
no

9.2. Other information
No further relevant informations available.

SECTION 10: Stability and reactivity

10.1. Reactivity
Evolution of heat under influence of acids.
No further hazardous reactions known if used as directed.

10.2. Chemical stability
Stable at ambient temperature.

10.3. Possibility of hazardous reactions
Exothermic reaction with strong acids.
Violent reactions with oxidising agents.

10.4. Conditions to avoid
Heat and direct solar radiation.

10.5. Incompatible materials
Substances to avoid
Reactions with strong acids.
Reactions with oxidising agents.
Reaction with nitric acid

10.6. Hazardous decomposition products
No decomposition if used as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity/Irritation/Sensitization

	Value/Validation	Species	Method	Remark
LD50 acute oral	> 5000 mg/kg		ATE (acute toxicity estimate)	
LD50 acute dermal	3900 - 4000 mg/kg		ATE (acute toxicity estimate)	

	Value/Validation	Species	Method	Remark
LC50 acute inhalation	> 50 mg/l ()		ATE (acute toxicity estimate)	vapours
Skin irritation	mediocre irritant	rabbit	OECD 404	
Eye irritation	risk of strong eye injuries			
Skin sensitization	sensitizing			

Specific target organ toxicity (single exposure)
The mixture is not classified as specific target organ toxicant (single exposure).

Specific target organ toxicity (repeated exposure)
The mixture is not classified as specific target organ toxicant (repeated exposure).

Aspiration hazard
The mixture is not classified as aspiration hazardous.

Toxicity test (Additional information)
The mixture is not classified as mutagen / not classified as carcinogen / not classified as reproductive toxicant.
morpholine : LD50(oral, rat): 1050 mg/kg, LD50(dermal, rabbit): ~500 mg/kg, LC50(inhalation, rat, 4h): 8.0 mg/l .

Experiences made from practice
Has a degreasing effect on the skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicological effects

	Value	Species	Method	Validation
Fish	LC50 3,0 mg/l		calculated	
Daphnia	EC50 15,5 mg/l		calculated	
Algae	EC50 3,2 mg/l		calculated	

12.2. Persistence and degradability

Physico-chemical degradability	100 %		Neutralization, pH-measurement	
Biological degradability	> 80 %	DOC decrease	calculated	readily degradable

12.3. Bioaccumulative potential
Morpholine: Accumulation in organisms is not expected.
Alkylbenzenesulphonates, C10-13-alkylderivates, Na-salts: Significant accumulation in organisms is not expected.
sodium carbonate: No bioaccumulation.
Laurylamine ethoxylated: not available.
sodium 3-nitrobenzenesulphonate: Accumulation in organisms is not expected (log Pow: -1.29).
Oleic acid monoethanolamide, ethoxylated: not available.
Amides, C8-18 (even numbered) and C18-unsatd., N,N-bis(hydroxyethyl): Because of the n-octanol/water partition coefficient accumulation in organisms is possible (log Pow >3).

12.4. Mobility in soil
Alkylbenzenesulphonates, C10-13-alkylderivates, Na-salts: Slightly mobile in soil.
sodium carbonate: not available.
Laurylamine ethoxylated: not available.

Morpholine: Adsorption on soil is not expected.
sodium 3-nitrobenzenesulphonate: Low adsorption on soil.
Oleic acid monoethanolamide, ethoxylated: not available.
Amides, C8-18 (even numbered) and C18-unsatd., N,N-bis(hydroxyethyl): Koc: 243, moderately mobile in soil.

12.5. Results of PBT and vPvB assessment
The product does not contain any PBT-/vPvB-substances according to the recipe.

12.6. Other adverse effects
No further relevant informations available.

Additional ecological information

	Value	Method	Remark
COD	ca. 0,53 gO2/g	calculated	
AOX	The product does not contain any organically bound halogens according to the recipe.		

General regulation
The surfactants in our product meet the criteria for biodegradation as laid down in Annex III of the Regulation (EC) No 648/2004 on detergents.
Acute aquatic environmental hazards: Aquatic Acute 2 H401: Toxic to aquatic life.
The mixture is not classified as chronic hazardous to the aquatic environment.
Do not allow uncontrolled leakage of product into the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste code No.	**Name of waste**
07 06 04*	other organic solvents, washing liquids and mother liquors

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 2008/98/EC on hazardous waste.

Recommendations for the product
Do not dispose with household waste.
Suitable for neutralization are acetic acid (60%, liquid) or citric acid (solid powder, crystallized) if a stainless steel bath is used.
Product is allowed to discharge into sewage treatment plants, but in accordance with official regulations.

Recommendations for packaging
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken fot reuse.

Recommended cleansing agent
Water

SECTION 14: Transport information

	ADR/RID	**IMDG**	**IATA-DGR**
14.1. UN number	-	-	-
14.2. UN proper shipping name	-	-	-

	ADR/RID	IMDG	IATA-DGR
14.3. Transport hazard class(es)	-	-	-
14.4. Packing group	-	-	-
14.5. Environmental hazards	-	-	-

14.6. Special precautions for user
no

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not relevant

Land and inland navigation transport ADR/RID
No dangerous goods as defined by these transport regulations.

Marine transport IMDG
No hazardous material as defined by the prescriptions.

Air transport ICAO/IATA-DGR
No hazardous material as defined by the prescriptions.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Authorizations
not relevant

Application restrictions
Regulation (EC) No 1907/2006 (REACH), Annex XVII No 3 + 40 - not relevant if used as directed.

Other regulations (EU)
Regulation (EC) No 648/2004 (Detergents regulation).
Directive 2012/18/EU, Annex I: not mentioned.

VOC standard
VOC content 9,3 %

15.2. Chemical Safety Assessment
For this mixture a chemical safety assessment were not carried out.

SECTION 16: Other information

Recommended uses and restrictions
National and local regulations concerning chemicals shall be observed.

Further information
These data are given according to our actual knowledge about this product.This data sheet does not correspond to an assurance by virtue of a contract for properties of the product.

Indication of changes: "!" = Data changed compared with the previous version. Previous version: 1.8
Sources of key data used
European Chemicals Agency, http://echa.europa.eu/.
Informations from our suppliers.

H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.