

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

1.1. Product identifier

SENO 4006 Developer Concentrate, 1 Liter

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

Uses of the substance/mixture

Water-based developer and activator solutions

1.3. Details of the supplier who provides the safety data sheet

	Manufacturer:	Danish importer (English translation):
Company name:	BESTCHEM GmbH	Helmholtz Elektronik A/S
Address:	Am Sportplatz 12 A	Farvervej 2-4
City:	D-63826 Geiselbach	DK-7600 Struer
Phone:	+49 (0) 6051 9779724	+45 9684 0611
E-mail:	info@bestchem.de	salg@helmholtz.dk
Website:	http://www.bestchem.de	http://www.helmholtz.dk

1.4. Emergency number:

Denmark +45 8212 1212 (emergency poison center/hotline)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EG) Nr. 1272/2008

Hazard categories:

Acute toxicity: Category 4

Skin corrosion / irritation: Skin etching, Category 1

Serious eye damage / eye irritation: Eye damage, Category 1

Reproductive toxicity: Category 1B

Hazard warnings:

Harmful if swallowed.

Causes serious irritation to the skin and serious eye damage.

Causes serious eye damage.

Can affect fertility. May cause harm to the unborn child.

Can irritate the respiratory tract.

2.2. Label elements

Regulation (EG) Nr. 1272/2008

Hazard-determining components for labeling

Potassium silicate

Potassium hydroxide; Caustic potash;

Potash lye

Boric acid

Signal words: Danger

Pictograms:



Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 2 of 12

Hazard warnings

H302	Harmful if swallowed.
H314	Causes serious irritation of the skin and serious eye damage.
H335	Can irritate the respiratory tract.
H360FD	Can affect fertility. May cause harm to the unborn child.

Precautionary Statements

Wear protective gloves/protective clothing/eye protection/face protection.

IF SWALLOWED: Rinse Mouth. DO NOT induce vomiting. Call a POISON CENTER / doctor if you feel unwell.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

Wash thoroughly with soap and water after use.

Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 3 of 12

Safety instructions

P201	Obtain special instructions before use.
P260	Do not breathe dust / smoke / gas / mist / vapor / aerosol.
P280	Wear protective gloves / protective clothing / eye protection / face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off all contaminated clothing immediately. Wash off skin with water or shower.
P305+P351+P338	IF CONTACT WITH THE EYES: Rinse gently with water for a few minutes. Remove any contact lenses if possible. Rinse further.
P310	Call a POISON CENTER / doctor immediately.

2.3. Other dangers

There is no information.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients

CAS-Nr.	Designation			Proportion of
	EG-Nr.	Index-Nr.	REACH-Nr.	
	Classification according to regulation (EG) Nr. 1272/2008 [CLP]			
1312-76-1	Potassium silicate			30 - < 35 %
	215-199-1		01-2119456888-17	
	Met. Corr. 1, Skin Corr. 1B, Eye Dam. 1, STOT SE 3; H290 H314 H318 H335			
1310-58-3	Potassium hydroxide; Caustic potash; Potash lye			20 - < 25 %
	215-181-3	019-002-00-8	01-2119487136-33	
	Met. Corr. 1, Acute Tox. 4, Skin Corr. 1A; H290 H302 H314			
10043-35-3	Boric acid			20 - < 25 %
	233-139-2	005-007-00-2	01-2119486683-25	
	Repr. 1B; H360FD			

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

First aider: Pay attention to self-protection! Remove the affected persons from the danger area and lay them down.

In case of inhalation

Provide fresh air. Medical treatment necessary.

In case of skin contact

Wash with plenty of water and soap. Take off immediately all contaminated clothing and wash it before wearing it again. Medical treatment necessary.

In case of eye contact

In case of contact with eyes, immediately rinse with running water for 10 to 15 minutes with the eyelid open and consult an ophthalmologist. Protect uninjured eye.

In case of swallowing

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Possible adverse effects on humans and possible symptoms: gastric perforation. Get medical attention immediately. Do not drink neutralizing agents.

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

No information

Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 4 of 12

4.3. Indications of immediate medical attention or special treatment

Symptomatic treatment.

SECTION 5: Firefighting measures**5.1. Extinguishing agent****Extinguishing media**

Co-ordinate firefighting measures to the fire surroundings.

5.2. Special hazards arising from the substance or mixture

Not flammable.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and chemical protective suit / full protective suit.

Additional information

Put out gases / vapors / mists with water. Collect the contaminated water separately and do not discharge into drains or rivers.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Provide adequate ventilation. Do not breathe gas / smoke / vapor / aerosol. Avoid contact with skin, eyes and clothing. Use protective equipment.

6.2. Environmental protection measures

Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

Soak up with absorbent material (sand, diatomaceous earth, acid binder, universal binder). Treat the absorbed material according to the disposal section.

6.4. Reference to other sections

Safe handling: see section 7

Personal protective equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage**7.1. Protective measures for safe handling****Advice for safe handling**

Provide adequate ventilation. Do not breathe gas / smoke / vapor / aerosol. Avoid contact with skin, eyes and clothes. Use personal protective equipment.

Information about fire and explosion protection

No special fire protection measures required.

7.2. Conditions for safe storage (taking incompatibilities into account)**Requirements for storage rooms and containers**

Keep container tightly closed. Store locked up. Store in a place that is only accessible to authorized persons. Ensure adequate ventilation and point extraction at critical points.

Advice on common storage

Do not store together with: Acid, Oxidizing agent, Peroxides. Food & feed.

Storage class according to TRGS 510: 6.1D (Non-flammable, acutely toxic cat. 3 / toxic or chronically acting hazardous substances)

7.3. Specific end uses

Water-based developer and activator solutions

Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 5 of 12

ABSCHNITT 8: Exposure controls / personal protection

8.1. Parameters to be monitored

Exposure limits (TRGS900)

CAS-Nr.	Designation	ppm	mg/m ³	F/m ³	Top limit	Art
10043-35-3	Boric acid		0,5 E		2(l)	

DNEL-/DMEL-Values

CAS-Nr.	Designation	DNEL Type	Route of exposure	Effect	Value
1312-76-1	Potassium silicate				
		Workers DNEL, long term	dermal	Systemic	1.49 mg/kg KG/d
		Consumer DNEL, long term	inhalative	Systemic	1.38 mg/m ³
		Consumer DNEL, long term	dermal	Systemic	0.74 mg/kg KG/d
		Consumer DNEL, long term	oral	Systemic	0.74 mg/kg KG/d
		Workers DNEL, long term	inhalative	Systemic	5.61 mg/m ³
1310-58-3	Potassium hydroxide; Caustic potash; Potash lye				
		Workers DNEL, long term	inhalative	Local	1 mg/m ³
		Consumer DNEL, long term	inhalative	Local	1 mg/m ³
10043-35-3	Boric acid				
		Workers DNEL, long term	inhalative	Systemic	8,3 mg/m ³
		Workers DNEL, long term	dermal	Systemic	392 mg/kg KG/d
		Consumer DNEL, long term	inhalative	Systemic	4,15 mg/m ³
		Consumer DNEL, long term	dermal	Systemic	196 mg/kg KG/d
		Consumer DNEL, long term	oral	Systemic	0,98 mg/kg KG/d
		Consumer DNEL, acute	oral	Systemic	0,98 mg/kg KG/d

PNEC-Values

CAS-Nr.	Designation	Environmental compartment	Value
1312-76-1	Potassium silicate		
		Fresh water	7.5 mg/l
		Sea water	1 mg/l
		Microorganisms in sewage plants	348 mg/l
10043-35-3	Boric acid		
		Fresh water	2,9 mg/l
		Fresh water (intermittent release)	13,7 mg/l
		Sea water	2,9 mg/l
		Microorganisms in sewage plants	10 mg/l
		Ground	5,7 mg/kg

8.2. Limitation and monitoring of exposure

Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 6 of 12

**Suitable technical control devices**

Ensure adequate ventilation and point extraction at critical points.

Protection and hygiene measures

Take off dirty, soaked clothes immediately. Create and follow the skin protection plan! Wash hands and face thoroughly before breaks and at the end of work, take a shower if necessary. Do not eat or drink during work.

Eye / Face protection

Suitable eye protection: tightly fitted safety glasses.

Hand protection

Wearing safety gloves.

When handling chemical agents, only chemical protective gloves with a CE mark including a four-digit test number may be worn. Chemical protective gloves are to be selected specifically for the workplace, depending on the concentration and quantity of hazardous substances. It is recommended to clarify the chemical resistance of the protective gloves mentioned above for special applications with the glove manufacturer.

Body protection

Wear suitable protective clothing when working.

Respiratory protection

In case of insufficient ventilation, wear respiratory protection

Limitation and monitoring of environmental exposure

Do not discharge into drains or rivers.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state:	Liquid
Colour:	Clear
Odor:	Odorless

pH-Values 13,5

State changes

Melting point: Not available

Boiling point / boiling range: 90 °C

Flash point: Not available

Flammability

Solid: Not applicable

Gas: Not applicable

Risk of explosion

The product is not: Explosive.

Lower explosion limit: Not available

Upper explosion limit: Not available

Ignition temperature: Not available

Autoignition temperature

Solid: Not applicable

Gas: Not applicable

Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 7 of 12

Decomposition temperature:

Not available

Oxidizing properties

Non-oxidizing.

Vapor pressure:

Not available

Density:

1,5 g/cm³

Solubility in water:

miscible

Solubility in other solvents

Not available

Partition coefficient:

Not available

Dyn. Viscosity:

Not available

Kin. Viscosity:

Not available

Vapor density:

Not available

Evaporation rate:

Not available

9.2. Other information

Odor threshold: not determined

SECTION 10: Stability and reactivity**10.1. Reactivity**

Possibility of hazardous reactions.

10.2. Chemical stability

The product is stable when stored at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Exothermic reaction with: acid, peroxides, oxidizing agents.

10.4. Conditions to avoid

There is no information.

10.5. Incompatible materials

Keep away from: acid, oxidizing agents, peroxides.

10.6. Dangerous decomposition products

No dangerous decomposition products are known.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity**

Harmful if swallowed.

ATEmix calculated

ATE (oral) 1463,7 mg/kg

Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 8 of 12

CAS-Nr.	Designation				
	Route of exposure	Dose	Species	Source	Method
1312-76-1	Potassium silicate				
	oral	LD50 > 5000 mg/kg	Rat	ECHA	
	dermal	LD50 > 5000 mg/kg	Rat	ECHA	
1310-58-3	Potassium hydroxide; Caustic potash; Potash lye				
	oral	LD50 333 mg/kg	Rat	ECHA	OECD 425
10043-35-3	Boric acid				
	oral	LD50 3450 mg/kg	Rat	ECHA	
	dermal	LD50 > 2000 mg/kg	Rat	ECHA	

Irritant and corrosive effects

Causes serious irritation of the skin and serious eye damage.

Sensitizing effects

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

Carcinogenic, mutagenic and reproductive effects

Can affect fertility. May cause harm to the unborn child. (Boric acid)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

Specific target organ toxicity – single exposure

Can irritate the respiratory tract (Potassium silicate)

Specific target organ toxicity – repeated exposure

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

Aspiration hazard

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

SECTION 12: Ecological information

12.1. Toxicity

The product is not: ecotoxic.

CAS-Nr.	Designation					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
1312-76-1	Potassium silicate					
	Acute algae toxicity	ErC50 207 mg/l	72 h	Scenedesmus subspicatus	Manufacturer	
10043-35-3	Boric acid					
	Acute fish toxicity	LC50 79,7 mg/l	96 h	Pimephales promelas (Fathead minnow)	ECHA	ASTM E729-95
	Acute algae toxicity	ErC50 52,4 mg/l	72 h	Pseudokirchneriella subcapitata	ECHA	OECD 201
	Fish toxicity	NOEC 11,2 mg/l	32 d	Pimephales promelas (Fathead minnow)	ECHA	ASTM E1241-05
	Algae toxicity	NOEC 17,5 mg/l		Pseudokirchneriella subcapitata	ECHA	OECD 201
	Crustacea toxicity	NOEC 25,9 mg/l	42 d	Hyalella azteca	ECHA	

Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 9 of 12

12.2. Persistence and degradability

The product has not been tested.

12.3. Bioaccumulative potential

The product has not been tested.

12.4. Mobility in the soil

The product has not been tested.

12.5. Results of the PBT and vPvB assessment

The product has not been tested.

12.6. Other adverse effects

There is no information.

More information

Avoid release in the environment.


SECTION 13: Disposal information**13.1. Waste treatment methods****Recommendation**

Do not discharge into drains or rivers. Disposal according to official regulations.

Dispose of uncleaned packaging and recommended cleaning agents

This product and its container must be disposed of as hazardous waste. Contaminated packaging should be treated like the substance.

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN-Number:	UN 1814
14.2. UN proper shipping name:	POTASSIUM HYDROXIDE SOLUTION
14.3. Transport hazard classes:	8
14.4. Packing group:	II
Danger label:	
Classification code:	C5
Limited quantity (LQ):	1 L
Excepted quantity:	E2
Transport category:	2
Danger number:	80
Tunnel restriction code:	E

Inland waterway transport (ADN)

14.1. UN-Number:	UN 1814
14.2. UN proper shipping name:	POTASSIUM HYDROXIDE SOLUTION
14.3. Transport hazard classes:	8
14.4. Packing group:	II
Danger label:	8

Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 10 of 12



Classification code: C5
Limited quantity (LQ): 1 L
Excepted quantity: E2

Sea transport (IMDG)

14.1. UN-Number: UN 1814
14.2. UN proper shipping name: POTASSIUM HYDROXIDE SOLUTION

14.3. Transport hazard classes: 8

14.4. Packing group: II

Danger label: 8



Special provisions: -
Limited quantity (LQ): 1 L
Excepted quantity: E2
EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN-Number: UN 1814
14.2. UN proper shipping name: POTASSIUM HYDROXIDE SOLUTION

14.3. Transport hazard classes: 8

14.4. Packing group: II

Danger label: 8



Special provisions: A3 A803
Limited quantity (LQ) Passenger: 0.5 L
Passenger LQ: Y840
Excepted quantity: E2
IATA-packing instruction - Passenger: 851
IATA-Maximum amount - Passenger: 1 L
IATA-Packing instruction - Cargo: 855
IATA-Maximum amount - Cargo: 30 L

14.5. Environmental hazards

Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 11 of 12

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

There is no information.

14.7. Transport in bulk according to Appendix II of MARPOL and the IBC Code

Not applicable

SECTION 15: Legislation**15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture****EU regulations**

Approvals (REACH, attachment XIV):

Substances of very high concern, SVHC (REACH, Article 59): Boric acid

Restrictions on use (REACH, attachment XVII): Entry 30:

Boric acid

Notes to the SEVESO III-Directive
2012/18/EU:

Not subject to SEVESOIII-Directive

National regulations

Employment restriction:

Observe employment restrictions for young people (§ 22 JArbSchG).
Observe employment regulations for nursing and to-be mothers (§§ 11
und 12 MuSchG).

Technical instructions air I:

5.2.7.1.3: Reproductive toxins: requirement to minimize emissions
< 25 %

Proportion of:

Water hazard class:

1 – slightly hazardous to water

Status:

Mixing rule according to the appendix 1 Nr. 5

AwSV

15.2. Chemical safety assessment

Safety datasheet

according to Regulation (EC) No. 1907/2006

SENO 4006 Developer, 1 Litre

Translated from original German version: 30.07.2020

Page 12 of 12

Chemical safety assessments for substances in this mixture were not carried out..

SECTION 16: Other information**Abbreviations and acronyms**ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Classification of mixtures and evaluation method used according to regulation (EG) Nr. 1272/2008 [CLP]

Classification	Classification process
Acute Tox. 4; H302	Calculation method
Skin Corr. 1; H314	Based on test data
Eye Dam. 1; H318	Calculation method
Repr. 1B; H360FD	Calculation method
STOT SE 3; H335	Calculation method

Wording of the H and EUH sentences (number and full text)

H290	Can be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes serious irritation to the skin and serious eye damage.
H318	Causes serious eye damage.
H335	Can irritate the respiratory tract.
H360FD	Can affect fertility. May cause harm to the unborn child.

More information

The information is based on the current state of our knowledge, however, it does not represent an assurance of product properties and does not constitute a contractual legal relationship. The recipient of our products is responsible for observing existing laws and regulations.

(The data of the dangerous ingredients were taken from the last valid safety data sheet of the supplier.)