SAFETY DATA SHEET

In accordance with 453/2010 and 1272/2008
(All references to EU regulations and directives are abbreviated into only the numeric term)

Issued 2013-03-26

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier
Trade name BRANDAX VS

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Smoke for leakage tests and air flow studies

1.3. Details of the supplier of the safety data sheet
Company BJÖRNAX AB
STRÅSSA FÖRETAGSBY
SE-71177 STRÅSSA
Sweden
Telephone +46 46 581 43150
E-Mail info@bjornax.se

1.4. Emergency telephone number
In case of emergency contact toxicological information, emergency tel 112 (within Europe) or 911 (for USA and Canada). For other countries, use the built-in emergency number in your cell phone
For non-emergency poison information, see http://www.who.int/ipcs/poisons/centre/directory/euro/en/

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture
Classification in accordance with 1272/2008
Irritates eyes (Category 2)
Harmful to aquatic life with long-lasting effects (Category Cron 3)

Classification in accordance with 1999/45/EG
Harmful.

2.2. Label elements
Label information in accordance with 1272/2008
Hazard pictograms

Signal words Warning
Hazard statements
H319 Causes serious eye irritation
H412 Harmful to aquatic life with long lasting effects
Precautionary statements
P210 Keep away from heat, sparks, open flames, or hot surfaces. - No smoking
P273 Avoid release to the environment
P280 Wear eye protection

Label information in accordance with 1999/45/EG
C.f. section 16.

2.3. Other hazards
The product produces smoke which can cause irritation upon contact with the eyes or inhalation under conditions of long periods of exposure or incorrect use. In case of uncertainty about how the product should be used, please contact the manufacturer or the company from which the product was originally purchased.
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is composed of a mixture of several solid substances.

3.2. Mixtures

Note that the table shows known hazards of the ingredients in a pure form. These hazards are reduced or eliminated when mixed or diluted, c.f. Section 16d.

<table>
<thead>
<tr>
<th>Constituent</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMMONIUM CHLORIDE</td>
<td>Acute Tox 4&lt;sub&gt;oral&lt;/sub&gt;, Eye Irrit 2; H302, H319 Xn; R22 R36</td>
<td>36%</td>
</tr>
<tr>
<td>CAS No</td>
<td>12125-02-9</td>
<td></td>
</tr>
<tr>
<td>EC No</td>
<td>235-186-4</td>
<td></td>
</tr>
<tr>
<td>Index No</td>
<td>017-014-00-8</td>
<td></td>
</tr>
<tr>
<td>POTASSIUM CHLORATE</td>
<td>Aquatic Chronic 2, Acute Tox 4&lt;sub&gt;dust&lt;/sub&gt;, Acute Tox 4&lt;sub&gt;oral&lt;/sub&gt;, Ox Sol 1; H411, H332, H302, H271 Xn O N; R9 R20/22 R51/53</td>
<td>24.9%</td>
</tr>
<tr>
<td>CAS No</td>
<td>3811-04-9</td>
<td></td>
</tr>
<tr>
<td>EC No</td>
<td>223-289-7</td>
<td></td>
</tr>
<tr>
<td>Index No</td>
<td>017-004-00-3</td>
<td></td>
</tr>
</tbody>
</table>

Explanations to the classification and labelling of the ingredients are given in Section 16e. Official abbreviations are printed in normal font. Text in italics are specifications and/or complement used in the calculation of the hazards of this mixture, c.f. Section 16b. Also contains component(s) not necessary to label.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Generally

No special measures are considered to be necessary. If symptoms do occur however, call a doctor/physician.

Upon breathing in

Inhalation of chemicals from the product in normal use is not appropriate. For generated smoke: In the case of overexposure to generated smoke, move the affected person to fresh air. If symptoms persist, consult a doctor.

Upon contact with the eyes

Eye contact with chemicals from the product in normal use is not appropriate. For generated smoke: If symptoms occur, Flush with lukewarm water with the eye or eyes wide open. If symptoms persist, consult a doctor. In the case of a broken or tampered product, the procedure for the constituent chemicals is as follows: Flush immediately with lukewarm water for 15 - 20 min with the eye or eyes wide open. If symptoms persist, consult a doctor.

Upon skin contact

Skin contact with chemicals from the product in normal use is not appropriate. In case of broken or tampered products the procedure for the constituent chemicals is as follows: Wash the skin with soap and water.

Upon ingestion

First rinse the mouth thoroughly with a lot of water and SPIT OUT the water. Then drink at least 1/2 liter of water and call a doctor/physician. Do NOT induce vomiting.

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

Information on symptoms are ambiguous or missing for this product.

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

Symptomatic treatment.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Recommended extinguishing agents

Extinguish with water.

Unsuitable extinguishing agents

Must not be extinguished with foam, powder or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

In case of fire, substances hazardous to health, or substances harmful in other respects, may be dispersed.

Combustible solid.

5.3. Advice for fire-fighters

In case of fire use a respirator mask.
SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Avoid discharge into sewers.

6.2. Environmental precautions
Not applicable

6.3. Methods and material for containment and cleaning up
Collect.
Residues left behind after cleaning shall be treated as hazardous waste. For further information, contact the local authority sanitisation works. Present this safety data sheet.

6.4. Reference to other sections
Not applicable

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling
This product should be stored well out of reach of young children and kept safely apart from products intended for consumption.
When using, place the product on an incombustible base and check that the product has gone out completely before it is discarded.

7.2. Conditions for safe storage, including any incompatibilities
Handle in premises with modern ventilation standards, store in a dry place.
Must not be stored in the vicinity of combustible material.
Keep away from moisture.
Store only in the original package.

7.3. Specific end uses
Not relevant.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters
8.1.1. National limit values, United Kingdom
All ingredients (cf. Section 3) lack occupational exposure limit values.

8.2. Exposure controls
In terms of minimizing risks, attention must be paid to the health hazards (c.f. Sections 2, 3 and 10) of this product or any of its ingredients according to EU directives 89/391 and 98/24 and national occupational legislation.
Eye protection should be worn if there is any danger of direct exposure or splashing.
Dust filter IIb (P2) may be required.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties
a) Appearance Form: Solid article
   Colour: white
b) Odour No smell or uncharacteristic smell
c) Odour threshold Not applicable
d) pH Not applicable
e) Melting point/freezing point Not applicable
f) Initial boiling point and boiling range Not applicable
g) Flash point Not applicable
h) Evaporation rate Not applicable
i) Flammability (solid, gas) Not applicable
j) (Upper/lower flammability or explosive limits Ignition temperature > 200 °C
k) Vapour pressure Not applicable
l) Vapour density Not applicable
m) Relative density Not applicable
n) Solubility Not applicable
o) Partition coefficient: n-octanol/water Not applicable  
p) Auto-ignition temperature Not applicable 
q) Decomposition temperature Not applicable  
r) Viscosity Not applicable 
s) Explosive properties Not applicable  
t) Oxidising properties Not applicable 

9.2. Other information  
No data available  

SECTION 10: STABILITY AND REACTIVITY  

10.1. Reactivity  
The product contains no substances which can lead to hazardous reactions at normal use.  

10.2. Chemical stability  
The product is stable at normal storage and handling conditions.  

10.3. Possibility of hazardous reactions  
Not indicated  

10.4. Conditions to avoid  
Avoid heat, sparks and open flames.  

10.5. Incompatible materials  
Avoid mixing with organic material.  

10.6. Hazardous decomposition products  
Not indicated  

SECTION 11: TOXICOLOGICAL INFORMATION  

11.1. Information on toxicological effects  
General or unspecific toxicity Not indicated  

Acute effects  
Not classified as an acutely toxic substance.  

Harmfulness  
The product is a health hazard.  

Corrosive and irritating effects  
Irritant on eyes, skin, mucous membranes and the upper respiratory tract.  

Relevant toxicological properties  
AMMONIUM CHLORIDE  
LD50 Orally rat = 1650 mg/kg  
POTASSIUM CHLORATE  
LD50 Orally rat = 1870 mg/kg  
LD50 Dermally rabbit > 2000 mg/kg  

SECTION 12: ECOLOGICAL INFORMATION  

12.1. Toxicity  
Contains substance that is toxic to herbs. Prevent discharge to soil, water and air. For environmental impact, see also Section 2.  

12.2. Persistence and degradability  
No information about persistence or degradability exists but there is no reason to suppose that the product is persistent.  

12.3. Bioaccumulative potential  
No information exists on bioaccumulation, but there is no cause for concern in respect of this.  

12.4. Mobility in soil  
No information about mobility in the nature exists but there is no reason to suppose the product to be ecologically harmful because of this.  

12.5. Results of PBT and vPvB assessment  
No chemical safety report has been executed.
12.6. Other adverse effects
Not indicated

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste handling for the product
The product after use is not classed as hazardous waste. Unused or broken products are classed as hazardous waste.
Cf. also national waste regulations.

Classification according to 2006/12
Recommended LoW-code: 16 03 03 Inorganic wastes containing dangerous substances.

Recycling of the product
Not indicated

SECTION 14: TRANSPORT INFORMATION

Where not otherwise stated the information applies to all of the UN Model Regulations, i.e. ADR (road), RID (railway), ADN (inland waterways), IMDG (sea), and ICAO (IATA) (air).

14.1. UN number
Not classified as dangerous goods

14.2. UN proper shipping name
Not applicable

14.3. Transport hazard class(es)
Not applicable

14.4. Packing group
Not applicable

14.5. Environmental hazards
Not applicable

14.6. Special precautions for user
Not applicable

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable

14.8 Other transport information
Stowage category not indicated.
Emergency Schedule (EmS) for FIRE (IMDG) Not indicated.
Emergency Schedule (EmS) for SPILLAGE (IMDG) Not indicated.

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Not applicable.

15.2. Chemical safety assessment
Assessment and chemical safety report in accordance with 1907/2006 Annex I has not yet been performed.

SECTION 16: OTHER INFORMATION

16a. Indication of where changes have been made to the previous version of the safety data sheet
Revisions of this document
Earlier versions
2012-05-24 The composition of this product was changed

16b. Legend to abbreviations and acronyms used in the safety data sheet
Full texts for Hazard Class and Category Code mentioned in section 3

No phys haz Non-assigned physical hazard
Acute Tox 4oral Acute toxicity (Category 4 oral)
Eye Irrit 2 Irritates eyes (Category 2)
Aquatic Chronic 2 Toxic to aquatic life with long lasting effects (Category Cron 2)
Acute Tox 4dust Acute toxicity (Category 4 dust)
Ox Sol 1 Oxidising solids (Verified Category 1)
Comprehensive definition of the hazards mentioned in Section 2

**Eye Irrit 2**
If, when applied to the eye of an animal, a substance produces at least in 2 of 3 tested animals, a positive response of:
- corneal opacity >= 1 and/or
- iritis >= 1, and/or
- conjunctival redness >= 2 and/or
- conjunctival oedema (chemosis) >= 2

calculated as the mean scores following grading at 24, 48 and 72 hours after installation of the test material, and which fully
reverses within an observation period of 21 days

**Aquatic Chronic 3**
Chronic (long-term) aquatic hazard. 96 hr LC50 (for fish) 10-100 mg/l and/or
48 hr EC50 (for crustacea) 10-100 mg/l and/or
72 or 96 hr ErC50 (for algae or other aquatic plants) 10-100 mg/l and the substance is not rapidly degradable and/or the
experimentally determined BCF >= 500 (or, if absent, the log Kow >= 4) unless the chronic toxicity NOECs are > 1 mg/l

Explanations of the abbreviations in Section 14
ADR European Agreement concerning the International Transport of Dangerous Goods by Road
RID Regulations concerning the International Transport of Dangerous Goods by Rail
ADN European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG International Maritime Dangerous Goods Code
ICAO International Civil Aviation Organization (ICAO, 999 University Street, Montreal, Quebec H3C 5H7, Canada)
IATA The International Air Transport Association

16c. Key literature references and sources for data

Sources for data
Primary data for the calculation of the hazards has preferentially been taken from the official European classification list,
Where such data was lacking, on the second hand the documentation on which this official classification is based was used, e.g.
IUCLID (International Uniform Chemical Information Database). On the third hand, information was used from reputable
international chemical suppliers, and on the fourth hand from other available information, e.g. safety data sheets from other
suppliers or information from non-profit associations, whereby the reliability of the source was judged by an expert. If, in spite of
this, reliable information was not found, the hazards were judged by expert opinions based on the known properties of similar
substances, and according to the principles in 1907/2006 and 1272/2008.

Full texts for Regulations mentioned in this Safety Data Sheet

the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of
Chemicals (REACH)

December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing

concerning the approximation of the laws, regulations and administrative provisions of the Member States relating
to the classification, packaging and labelling of dangerous preparations

89/391 COUNCIL DIRECTIVE (89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements
in the safety and health of workers at work

98/24 COUNCIL DIRECTIVE 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the
risks related to chemical agents at work (fourteenth individual Directive within the meaning of Article 16(1) of
Directive 89/391/EEC)

2006/12 DIRECTIVE 2006/12/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 5 April 2006 on
waste

December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH),

16d. Methods of evaluating information referred to in 1272/2008 Article 9 which was used for the purpose of
classification
The calculation of the hazards of this mixture has been performed as an evaluation by applying a weight of evidence determination
using expert judgement in accordance with 1272/2008 Annex I, weighing all available information having a bearing on the
determination of the hazards of the mixture, and in accordance with 1907/2006 Annex XI.
16e. List of relevant R phrases, hazard statements, safety phrases and/or precautionary statements

**Full text for risk phrases mentioned in section 3**

- R22 Harmful if swallowed
- R36 Irritating to eyes
- R9 Explosive when mixed with combustible material
- R20/22 Harmful by inhalation and if swallowed
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Full texts for hazard statements mentioned in section 3**

- H302 Harmful if swallowed
- H319 Causes serious eye irritation
- H411 Toxic to aquatic life with long lasting effects
- H332 Harmful if inhaled
- H271 May cause fire or explosion; strong oxidizer

16f. Advice on any training appropriate for workers to ensure protection of human health and the environment

**Other relevant information**

**Label information in accordance with 1999/45/EG**

- **Hazard symbol**

  ![Hazard symbol](image)

  Harmful

**R-phrases**

- R22 Harmful if swallowed
- R36 Irritating to eyes
- R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**S-phrases**

- S22 Do not breathe dust
- S25 Avoid contact with eyes
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S29 Do not empty into drains
- S37 Wear suitable gloves
- S46 If swallowed, seek medical advice immediately and show this container or label

**Editorial information**

This safety data sheet has been generated by the program KemRisk®, KemRisk Sweden AB, Teknikringen 10, SE-583 30 Linköping, Sweden.