1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product Identifier:
Trade Name: Boric Acid
CAS Number: 10043-35-3
EC Number: 233-139-2

Relevant identified uses of the substance or mixture and uses advised against.
Application of the substance/ the preparation:
The substance is used in food processing (E284: preservative), as a mild acid used an antiseptic, insecticide, flame retardant, in nuclear power plants to regulate the fission rate or uranium, and as a precursor of other chemicals.

Company name:
Nexchem Ltd
Unit 1 Underwood Court
Elm Tree Avenue
Glenfield
Leicester
Leicestershire
LE3 8SG
Tel: 0116 2311130
Fax: 0116 2311124
Emergency Tel: +44 (0) 116 2877916 or +44 (0) 7714 303742 (24 Hours)
Email: sales@nexchem.co.uk

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification according to Regulations (EC) No 1271/2008

GHS08 health hazard.

Repr. 1B H360FD May damage fertility. May damage the unborn child.

Label elements
Labelling according to Regulation (EC) No 1272/2008: The substance is classified and labelled according to the CLP regulations.

[cont..]
Hazard pictograms: GHS08
Signal word: Danger
Hazard-determining components of labelling: Boric acid.
Hazard statements: H360FD May damage fertility. May damage the unborn child.
Precautionary statements: P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P201 Obtain special instructions before use.
P260 Do not breathe dust.
P263 Avoid contact during pregnancy/while nursing.
P308+313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/ regional/ national/ international regulations.

Other hazards
Results of PBT and vPvB assessment.
PBT: Not applicable.
vPvB: Not applicable.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical characterization: Substances
CAS No. Description: 10043-35-3 Boric acid
Identification number(s)
EC Number: 233-139-2
SVHC: 10043-35-3 Boric acid

4. FIRST AID MEASURES

Description of first aid measures
General information: Immediately remove any clothing soiled by the product.
May absorbed through injured skin.
After inhalation: Supply fresh air; consult doctor in case if complaints.
After skin contact: Immediately rinse with water.
If skin irritation continues, consult a doctor.
After eye contact: Check for and remove contact lenses.
Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing: Rinse out mouth and the drink plenty of water. Seek medical treatment.
Information for doctor: Treat symptomatically and supportively.
Most important symptoms and effects, both acute and delayed: No further relevant information available.
Indication of any immediate medical attention and special treatment needed: No further relevant information available.

[cont..]
SAFETY DATA SHEET
Boric Acid

5. FIRE-FIGHTING MEASURES

Extinguishing media
Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
Special hazards arising from the substance or mixture: Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Advice for fire fighters
Protective equipment: Wear fully protective suit.
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
Avoid formation of dust.
Ensure adequate ventilation.
Wear protective equipment. Keep unprotected persons away.
Environmental precautions:
Do not allow to penetrate the ground/soil.
Do not allow to enter sewers/surface or ground water.
Methods and material for containment and cleaning up:
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.
Reference to other sections:
No dangerous substances are released.

7. HANDLING AND STORAGE

Handling:
Precautions for safe handling:
Prevent formation of dust.
Ensure good ventilation/exhaustion at the workplace.
Avoid direct contact (skin contact, ingestion and/or inhalation of fume/mist/dust) with the product.
Warn relevant workers of the dangers of working with this product and provide suitable and sufficient training to ensure safe working.
The product is classified as toxic. Direct contact (skin, eyes and by inhalation) and ingestion must be prevented. A safe system of work, taking into account the product properties and the operation taking place, must be formulated (by a competent, trained and suitably experienced person) prior to work taking place and the system must be followed to ensure the safety of workers and other who may be affected.
Information about fire- and explosion protection: No special measures required.

[cont..]
Conditions for safe storage, including any incompatibilities

Storage:
Requirements to be met by storerooms and receptacles: Prevent any see page into the ground.
Information about storage in one common storage facility: Store away from foodstuffs.
Further information about storage conditions: Store in cool, dry conditions in well-sealed receptacles.
Specific end use(s): No further relevant information available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Additional information about design of technical facilities: No further data; see item 7.

Control parameters
Ingredients with limit values that require monitoring at the workplace: Not required.
Additional information: The lists valid during the making were used as basis.

Exposure controls
Personal protective equipment: Select PPE appropriate for the operations taking place taking into account the product properties.

General protective and hygienic measures:
  - Wash hands before breaks and at the end of work.
  - Do not eat, drink, smoke or sniff while working.
  - Avoid contact with the eyes and skin.
  - Do not breathe dust.
  - Storing food in the working area is prohibited.
  - Pregnant women should strictly avoid inhalation or skin contact.
  - A safe system of work must be formulated and followed to ensure safe working with this product.
  - Relevant workers must receive suitable and sufficient training and supervision.

Respiratory protection: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Protection of hands: The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection: Safety glasses.
Body protection: Protective work clothing.
9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physic and chemical properties:

General Information:

Appearance:
- Form: Solid
- Colour: White
- Odour: Odourless
- pH-value (50g/l) at 20°C: 3.7

Change in condition:
- Melting point/Melting range: 169 (decomp) °C
- Boiling point/Boiling range: Undetermined.
- Flash point: Not applicable.

Flammability (solid, gaseous): Product is not flammable.

Danger of explosion: Product does not present an explosion hazard.

Density at 20°C: 1.435 g/cm³
Bulk density at 20°C: 500 kg/m³

Solubility in/ Miscibility with water at 20°C: 300 g/l

Other information: Partition coefficient n-octanol/water (log value) = 1.09

10. STABILITY AND REACTIVITY

Reactivity

Chemical stability

Thermal decomposition/ conditions to be avoided: To avoid thermal decomposition do not overheat.

Possibility of hazardous reactions: The solution in water is a week acid.
- Incompatible with alkali carbonates and hydroxides.
- Reactions with strong reducing agents will generate hydrogen gas which could create an explosion hazard.

Conditions to avoid: No further relevant information available.

Incompatible materials: Acetic anhydride and strong bases.

Hazardous decomposition products: Boric acid is a substance but when heated it loses water to form metaboric acid, and on further heating it is converted into boric oxide.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

LD/LC50 values relevant for classification:

10043-35-3 Boric acid

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>2660 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>&gt;2000 mg/kg (rat)</td>
</tr>
</tbody>
</table>

[cont..]
Primary irritant effect:
On the skin: No irritant effect.
On the eye: No irritating effect.
Sensitization: No sensitizing effects known.
Sub-acute to chronic toxicity: EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: Repeated or prolonged contact with skin may cause dermatitis.
Animal tests show that this substance possibly causes toxic effects upon human reproduction.
Additional toxicological information: The product shows the following dangers according to the calculation method of the General EU Toxic.

ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.
INHALATION RISK: Evaporation at 20°C is negligible; a nuisance-causing concentration of airborne particles can, however, be reached quickly when dispersed.
EFFECTS OF SHORT-TERM EXPOSURE: The substance may cause effects on the gastrointestinal tract, liver and kidneys.
CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
Repr. 1B

12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability: No further relevant information available.
Behaviour in environmental systems:
Bioaccumulative potential: Product is not expected to bioaccumulate.
Mobility in soil: No further relevant information available.
Additional ecological information:
General notes: Water hazard class 1 (German Regulations) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment:
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects: No further relevant information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation: Contact waste processors for recycling information.
Used, degraded or contaminated product may be classified as hazardous waste. Anyone classifying hazardous waste and determining its fate must be qualified in accordance with state and international legislation.
European waste catalogue: Waste key numbers in accordance with the European Waste catalogue (EWC) are origin-referred defined. Since this product is used in several industries, no waste key can be provided by the supplier. The waste key number should be determined in arrangement with your waste disposal partner or the responsible authority.

Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations. Container remains hazardous when empty. Continue to observe all precautions.

Recommended cleansing agents: Water, if necessary together with cleansing agent.

14. TRANSPORT INFORMATION

UN-Number
ADR, AND, IMDG, IATA Void

UN proper shipping name
ADR, AND, IMDG, IATA Void

Transport hazard class(es)
ADR, AND, IMDGm IATA Void
Class

Packaging group
ADR, IMDG, IATA Void

Environmental hazards:
Marine pollutant: No

Special precautions for user: Not applicable.

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

Transport/ Additional information: Not dangerous according to the above specifications.
UN "Model Regulation"

[cont..]
15. REGULATORY INFORMATION

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

National regulations.

Hazard symbols: No significant hazard.

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Legal disclaimer: The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.