

Revision: 2.1

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## Section 1. Identification

### 1.1 Product Identifier 1404

Product Name SODIUM BOROXYDRIDE pure  
CAS Number 16940-66-2  
REACH Registration No 01-2119485016-39-XXXX  
Molecular Formula  $\text{NaBH}_4$  =37.83

### 1.2 Relevant identified uses of the substance or mixture & uses advised against

Uses of Material Chemical for industrial and laboratory use. Not suitable for domestic use.

### 1.3 Supplier Vickers Laboratories Ltd



Grangefield Industrial Estate  
Richardshaw Road  
Pudsey  
West Yorkshire  
LS28 6QW  
UNITED KINGDOM

Phone 44 0113 2362811  
Fax +44(0)113 2362703  
Email [safety@viclabs.co.uk](mailto:safety@viclabs.co.uk)  
Website [www.viclabs.co.uk](http://www.viclabs.co.uk)

### 1.4 Emergency Telephone (08:00-16:30) +44(0) 113 2362811 (24hr) 112 (Have this document to hand)

## Section 2. Hazards Identification

### 2.1 Classification of the substance or mixture

#### Classification according to regulation 1272/2008/EC

Contact with water > flam gas, category 1

Acute toxicity, category 3 (oral)

Skin corrosion/irritation, category 1C

Serious eye damage/irritation, category 1

Reproductive toxicity, category 1B

H260: In contact with water releases flammable gases which may ignite spontaneously.

H301: Toxic if swallowed.

H314: Causes severe skin burns and eye damage.

H318: Causes serious eye damage.

H360: May damage fertility or the unborn child.

### 2.2 Label elements

#### Labelling according to regulation 1272/2008/EC

Signal word Danger

Hazard Pictograms



**Hazard Statements** In contact with water releases flammable gases which may ignite spontaneously. Toxic if swallowed. May damage fertility or the unborn child. Causes severe skin burns and eye damage.

**Precautionary Statements** Keep away from any possible contact with water, because of violent reaction and possible flash fire. Handle under inert gas. Protect from moisture. Wear protective gloves / protective clothing / eye protection. Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. Use dry powder for extinction.

## Section 3. Composition

### 3.1 Substances

Component	CAS No.	EEC No.	REACH No.	Conc w/w	CLP Classification (1272/2008/CE)
Sodium borohydride	16940-66-2	241-004-4	01-2119485016-39-XXXX	>97%	Water-react. 1, Acute Tox. 3 (O), Skin Corr. 1C, Eye Dam. 1, Repr. 1B

## Section 4. First Aid

### 4.1 Description of first aid measures

Eyes	Irrigate thoroughly with plenty of water for at least 10 minutes, holding the eye open. OBTAIN MEDICAL ATTENTION URGENTLY.
Skin	Wash off skin thoroughly with water. Remove contaminated clothing immediately and wash before re-use. If discomfort persists OBTAIN MEDICAL ATTENTION.
Inhalation	Remove from exposure.
Ingestion	Wash out the patients mouth thoroughly with water. OBTAIN MEDICAL ATTENTION URGENTLY.
Personal protection for first aiders	Wear protective gloves / eye protection.

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

No further relevant information available.

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

No further relevant information available.

## Section 5. Fire Fighting

### 5.1 Extinguishing media

Extinguishing Media	Dry graphite, soda ash, powdered sodium chloride or appropriate metal fire extinguishing powder.
Unsuitable Media	Water, halons and carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

Hazards	May evolve toxic fumes if involved in a fire. Spontaneously combustible above 220C.
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### 5.3 Advice for firefighters

Advice for firefighters	Evacuate area immediately. Keep up wind. Avoid exposure to toxic vapours and fumes. Fire-fighters should wear protective clothing and breathing apparatus.
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## Section 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal Protection	Avoid breathing dust-wear respiratory protective equipment. Ensure no contact with water, acids or other aqueous solutions is possible. Use approved personal protective equipment.
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## 6.2 Environmental precautions

Environmental Notify the Environmental Agency and local Environmental Health Officer if major spillage occurs.

## 6.3 Methods and material for containment and cleaning up

Major Spillage Shovel/sweep up into container for removal Wash area down with copious amounts of water (taking precautions as hydrogen is evolved).

Minor Spillage Wash area down with copious amounts of water (taking precautions as hydrogen is evolved).

## 6.4 Reference to other sections

See section 8.2 for information on protective equipment and section 13 for information on disposal.

# Section 7. Storage & Handling

## 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Do not breath dust. Do not allow to contaminate clothing.

Ensure Local Exhaust Ventilation maintains dust concentrations to a minimum.

## 7.2 Conditions for safe storage, including any incompatibilities

Well ventilated, cool, dry storage . Keep containers closed when not in use. Protect against ingress of moisture.

## 7.3 Specific end use(s)

See section 1.2.

# Section 8. Workplace Exposure & Personal Protection

## 8.1 Control parameters

Component	CAS No	Concentration	Workplace Exposure Limits			
			Long Term (8hr TWA)		Short Term 15min period	
Sodium borohydride	16940-66-2	>97%	-	-	-	-

Exposure data source(s) No occupational exposure data currently available.

## 8.2 Exposure controls

Respiratory Protection Use L.E.V. or natural ventilation to reduce dust concentrations to a minimum.

Hand Protection Use nitrile gloves or PVC gauntlets.

Eye Protection Use tightly fitting chemical splash proof glasses or goggles.

Skin Protection If skin contact or contamination of clothing is likely, protective clothing must be worn.

Special Hazards No special precautions required.

# Section 9. Physical & Chemical Properties

## 9.1 Information on basic physical and chemical properties

Appearance	White powder.
Odour	Faint 'amine-like: odour.
pH	11 @ 20°C
Boiling Point	Not available
Melting Point	Not applicable
Flash Point	Not applicable
Upper Flammable Limit	Not applicable
Lower Flammable Limit	Not applicable
Auto Ignition	Not applicable
Explosive Properties	No.
Oxidising Properties	No.
Vapour Pressure	Not applicable
Relative Density	1.0800

Water Solubility                      Reacts with water evolving a flammable gas.

## 9.2 Other information

No data available.

## Section 10. Stability & Reactivity

- 10.1** Reactivity                      No data available.
- 10.2** Chemical Stability              Stable under normal conditions but spontaneously flammable in air above 220C.
- 10.3** Possibility of hazardous reactions              No data available.
- 10.4** Conditions to Avoid              Avoid contact with water or water vapour.
- 10.5** Incompatible Materials              Decomposes in water, water containing solvents and alcohols to evolve extremely flammable hydrogen gas. Reacts violently with heavy metals, chlorosilanes, acids, oxidising agents, activated charcoal, and halogenated solvents. Formation of highly toxic diborane is possible in acids.
- 10.6** Hazardous Decomposition Products              Decomposes to emit extremely flammable hydrogen gas and highly toxic diborane.

## Section 11. Toxicological Information

### 11.1 Information on toxicological effects

- Eyes                                      The dust is be extremely irritating to eyes and can cause chemical eye burns.
- Skin                                        Contact with the solid or dust will cause burns.
- LD50 Skin                                4000-8000 mg/Kg Rabbit
- Ingestion                                Toxic if swallowed. Will cause burns to gastrointestinal tract.
- LD50 Oral                                 56.57 mg/Kg Rat
- Inhalation                                Inhalation of dust may produce severe irritation of the eyes, nose, throat and respiratory tract.
- LD50 Inhalation                        >5.18 mg/L Rat
- TCLo                                        Not available
- Carcinogenicity                        No information is available.
- Mutagenicity                            Not considered to be a mutagen.
- Reproductive Effects                    May damage fertility or the unborn child. Route of exposure: Oral

## Section 12. Ecological

- 12.1** Toxicity                            Expected to cause impairment of water quality. . Acute bacterial toxicity:activated sludge micro-organism. EC50:1961mg/l Fish toxicity, Zebra Barbel, 96Hr test. LClo 133mg/l.
- LC50 Algal                                Not available
- LC50 Crustacea                         Not available
- LC50 Fish                                 Not available
- 12.2** Persistence and degradability              No data available.
- 12.3** Bioaccumulative potential              No data available.
- 12.4** Mobility in soil                      No data available.
- 12.5** Results of PBT & vPvB assessment              Assessment not required.
- 12.6** Other adverse effects              None known at present.

## Section 13. Disposal Considerations

### 13.1 Waste treatment methods

Disposal Methods Neutralise small amounts with acid, then rinse away with plenty of water (taking suitable precautions to deal with hydrogen formed)

Contaminated Packaging Use a licensed waste disposer.

## Section 14. Transport Information

14.1 UN Number	1426
14.2 Proper Shipping Name	Sodium borohydride
14.3 Transport classes	
UN classification	4.3
Subsidiary hazard(s)	None
Transport category	1
ADR Hazard ID	
Tunnel Restriction Code	E
14.4 Packing Group	I
14.5 Environment hazards	See section 12.
14.6 Special precautions for user	No special precautions required.
14.7 Transport in bulk	Not transported in bulk.



## Section 15. Regulatory Information

### 15.1 Safety, health and environment regulations specific for substance/mixture.

#### Classification, Labeling & Packaging of Substances & Mixtures Regulations (1272/2008/CE)

Classification Contact with water & > flam gas, category 1; Acute toxicity, category 3 (oral); Skin corrosion/irritation, category 1C; Serious eye damage/irritation, category 1; Reproductive toxicity, category 1B

Signal word Danger

Hazard Pictograms



Hazard Statements H260, H301, H360, H314+H318  
In contact with water releases flammable gases which may ignite spontaneously. Toxic if swallowed. May damage fertility or the unborn child. Causes severe skin burns and eye damage.

Precautionary Statements P223, P231+P232, P280, P335+P334, P378  
Keep away from any possible contact with water, because of violent reaction and possible flash fire. Handle under inert gas. Protect from moisture. Wear protective gloves / protective clothing / eye protection. Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. Use dry powder for extinction.

### 15.2 Chemical safety assessment

Assessment not required.

## Section 16. Other Information

The information contained in this document only covers the hazards presented by this material, it DOES NOT constitute a workplace risk assessment. See sections 11 for toxicological information and section 12 for ecological information.

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