

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

Product identifier

Product name: Ferro Flux

Other means of identification

Product code: 525

Recommended use of the chemical and restrictions on use

Recommended use: Flux for welding cast iron and steel.

Details of the supplier of the safety data sheet

Manufacturer: Force Industries Division.
28 Industrial Blvd. Paoli, PA 19301.

Emergency Telephone number

For hazardous materials incidents only, call CHEMTREC Emergency Response Number:

1-800-424-9300.

For all other questions about this product, call Force Industries Division at 610-647-3575.

Revision Date: July 21, 2016

Supersedes Date: March 27, 2016

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Eye Irritant (Category 2A), H319

Reproductive toxicity (Category 1B), H360

Acute aquatic toxicity 3, H402

Chronic aquatic toxicity 3, H412

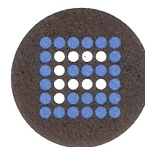
Hazard statement(s)

H319: Causes serious eye irritation

H360: May damage fertility or the unborn child.


H402: Harmful to aquatic life

H412: Harmful to aquatic life with long-lasting effects



2.2 GHS Label elements, including precautionary statements

Emergency overview

Appearance:	Reddish Brown
Physical state:	Powder
Odor:	None
Signal Word:	Danger
	

Precautionary statement(s)

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P264 Wash skin thoroughly after handling.
- P273 Avoid release to the environment.
- P280 Wear eye protection/ face protection.
- P281 Use personal protective equipment as required.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P305+P351+P338 IF exposed or concerned: Get medical advice/ attention.
- P308+P313 IF eye irritation persists: Get medical advice/ attention.
- P337+P313 If eye irritation persists: Get medical advice/ attention.
- P405 Store locked up.
- P501 Dispose of contents/ container to an approved waste disposal plant.

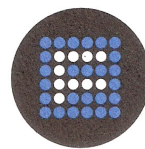
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS No.</u>	<u>EINECS No.</u>	<u>Weight %</u>
Borax Anhydrous	1330-43-4	215-540-4	18-31
Sodium Carbonate Sodium	497-19-8	207-838-8	45-60
Sesquicarbonate	533-96-0	208-580-9	10-20

Others, if any, are non-hazardous and claimed as trade secret.



SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

Eyes: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician immediately. Continue rinsing eyes during transport to hospital.

Skin: Wash off with plenty of water. Consult a doctor if a rash or burn develops.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center. Give large quantities of water, milk, or 5% sodium bicarbonate solution.

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

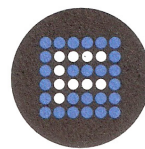
May release hydrogen bromide gas fumes. Dense smoke may be generated.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary. Full protective equipment required.

5.4 Further information

No data available.



SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Sweep up material with inert absorbent material. Place material into a suitable container. Clean spill area thoroughly.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

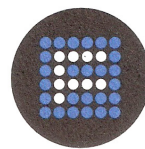
Avoid contact with skin and eyes. Avoid formation of dust. Provide appropriate exhaust ventilation. Professionally wash contaminated clothes before re-use. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store flux at ambient conditions, keep containers tightly closed and away from foodstuffs. Wash thoroughly after handling to remove all residues. No eating or smoking in work area.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.



SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Components	OSHA PEL	ACGIH TLV	ACGIH TWA
Sodium Carbonate	15 mg/m ³ for Dust	NA	NA
Borax Anhydrous	15 mg/m ³ for Dust	6 mg/m ³	2 mg/m ³
Sodium Sesquicarbonate	15 mg/m ³ for Dust	NA	NA

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

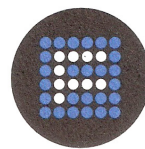
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components



tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

APPEARANCE: Reddish brown powder

ODOR: None

BOILING POINT: NA

SOLUBILITY IN WATER: Appreciable

BULK DENSITY (lbs./cu.ft): 123

EVAPORATION RATE: NA

% VOLATILE: NA

9.2 Other safety information

None

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

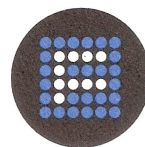
No data available

10.5 Incompatible materials

Potassium, Acid anhydrides

10.6 Hazardous decomposition products

No data available



SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Component toxicity

Components	LC50/Inhalation/6h/Rat	LC50/Dermal/Rabbit	LD50/Oral/Rat
Borax Anhydrous	Not known	2000 mg/kg	2400-2600 mg/kg

11.2 Effects of Acute Overexposure:

- a. Inhalation: No data available.
- b. Eyes: Rabbit – Result: Eye irritation
- c. Skin Contact: No Skin irritation
- d. Ingestion: No data available.

11.3 Primary Route of Exposure:

Skin, eyes, and inhalation

11.4 Effects of Chronic Exposure:

Coughing, erythema, nausea. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

11.5 Target Organs:

No data available

11.6 Reproductive Effects

Reproductive toxicity: Borax Anhydrous is a presumed human reproductive toxicant, Teratogenicity: Borax Anhydrous – feta-toxicity

11.7 Carcinogenicity:

No data available

SECTION 12: ECOLOGICAL INFORMATION

12. ECOLOGICAL INFORMATION

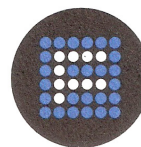
12.1 Toxicity

Toxicity to fish

Components	LC50 – Limanda limanda
Borax Anhydrous	74 mg/l - 96 h

12.2 Persistence and degradability

No data available



12.3 Bio-accumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product: offer surplus and non-recyclable solutions to a licensed disposal company. Dispose of in accordance with all federal, state, and local regulations.

Contaminated packaging

Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

DOT (US)

Not Regulated

SECTION 15: REGULATORY INFORMATION

International Inventories

USA (TSCA):

Complies

Federal Regulations

SARA Title III 313 Reportable Substances

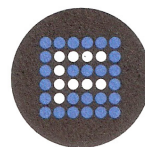
This product does not contain chemicals which are subject to the reporting requirements of the Act and of Title 40 of the Code of Federal Regulations, Part 372

SARA Title III Section 311/312 Hazard Categories:

Acute Health Hazard

Chronic Health Hazard

SAFETY DATA SHEET



**FORCE
INDUSTRIES
DIVISION**

Toxic Substance Control Act (TSCA)

If listed below, non-proprietary substances are subject to export notification Section 12 (b) of TSCA:

None

State Regulations (RTK)

Pennsylvania Right to Know Components

Borax Anhydrous	1330-43-4
Sodium Carbonate	497-19-8
Sodium Sesquicarbonate	533-96-0

New Jersey Right to Know Components

Borax Anhydrous	1330-43-4
Sodium Carbonate	497-19-8
Sodium Sesquicarbonate	533-96-0

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: OTHER INFORMATION

HMIS:

Health: 1

Flammability: 0

Reactivity: 0

PREPARATION INFORMATION: Technical Service Department, Force Industries Division

DISCLAIMER: The data set forth in these sheets are based on information provided by the suppliers of the raw materials and chemicals used in the manufacture of the aforementioned product. Force Industries makes no warranty with respect to the accuracy of the information provided by their suppliers, and disclaims all liability of reliance thereon. Force Industries warrants only that its products conform to their published specifications and no other express warranty is made with regards thereof. We do not guarantee favorable results, and we assume no liability in connection with the use of the products. They are intended for use by persons having technical skill and knowledge, at their own discretion and risk.