

# SAFETY DATA SHEET



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

### Product identifier

**Product name:** AMCO 444 Gray

### Other means of identification

**Product code:** 270

### Recommended use of the chemical and restrictions on use

**Recommended use:** General purpose welding flux

### Details of the supplier of the safety data sheet

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

### Emergency Telephone number

For hazardous material incidents only, call CHEMTREC Emergency Response Number:  
1-800-424-9300.

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

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

Eye irritation (Category 2A)

Reproductive toxicity (Category 1B)

Acute aquatic toxicity (Category 3)

Chronic aquatic toxicity (Category 3)

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2 GHS Label elements, including precautionary statements

#### Emergency overview

**Appearance:** Charcoal Gray  
**Physical state:** Paste  
**Odor:** None

**DANGER**



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## Hazard statement(s)

H319: Causes serious eye irritation.  
H360: May damage fertility or the unborn child.  
H361: Suspected of damaging fertility or the unborn child.  
H412: Harmful to aquatic life with long lasting effects.

## 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.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P313: IF exposed or concerned: 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>
<b>Boric acid</b>	<b>10043-35-3</b>	<b>233-139-2</b>	<b>60-80</b>
<b>Sodium tetraborate decahydrate</b>	<b>1303-96-4</b>	<b>215-540-4</b>	<b>1-10</b>

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. Move out of dangerous area.

##### If inhaled

If breathed in, remove person to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Consult a physician.



**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. 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**

Borane/boron oxides

**5.3 Advice for firefighters**

In the event of fire, wear self-contained breathing apparatus.

**5.4 Further information**

No data available.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains. Discharge into the environment must be avoided.

**6.3 Methods and materials for containment and cleaning up**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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## 6.4 Reference to other sections

For disposal see section 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Moisture sensitive. Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### 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

Component	CAS-No.	Value	Control parameters	Basis
Boric acid	10043-35-3	TWA	2 mg/m <sup>3</sup> (as borate compounds)	ACGIH Threshold Limit Values (TLV)
Sodium tetraborate decahydrate	1303-96-4	TWA	2 mg/m <sup>3</sup>	ACGIH Threshold Limit Values (TLV)

### 8.2 Exposure controls

#### Appropriate engineering controls

General industrial hygiene practice.

#### Personal protective equipment

##### Eye/face protection

Safety glasses with side-shields. 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.

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Full contact  
Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min  
Splash contact  
Material: Nitrile rubber  
Minimum layer thickness: 0.11 mm  
Break through time: 480 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

## 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 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

Do not let product enter drains. Discharge into the environment must be avoided.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

<b>Physical state:</b>	Paste
<b>Odor:</b>	None
<b>Color:</b>	Charcoal Gray
<b>Flash point:</b>	N/A
<b>Vapor pressure:</b>	N/A
<b>Vapor density:</b>	N/A
<b>Specific gravity:</b>	1.37
<b>Water solubility:</b>	Moderate

### 9.2 Other safety information

No other data



## 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**Other decomposition products – no reactivity  
No dangerous reaction known under conditions of normal use

## SECTION 11: TOXICOLOGICAL INFORMATION

**Component toxicity**

Components	LD50/Rabbit (Dermal)	LD50/Oral/Rat
Boric acid	No Data	2,660 mg/kg
Sodium tetraborate decahydrate	2,000 mg /kg	2,600 mg/kg

**Reproductive toxicity**

In animal testing, risk of impaired fertility was shown only after administration of very high doses of this substance

**Skin corrosion/irritation**

Skin - Rabbit Result: No skin irritation

**Serious eye damage/eye irritation**

Eyes - Rabbit Result: Moderate eye irritation (OECD Test Guideline 405)

**Respiratory or skin sensitization**

Buehler Test - Guinea pig Result: Does not cause skin sensitization. (OECD Test Guideline 406)



## **Germ cell mutagenicity**

No data available

## **Chronic Toxicity and Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

## **Carcinogenicity:**

No data available

## **Developmental Toxicity**

No data available

## **Reproductive Toxicity**

For the minor component(s): In animals, effects have been reported on the following organs: Male reproductive organs. Repeated excessive exposures to high amounts may cause effects on testes and fertility in males.

## **Genetic Toxicology**

Based on information for component(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

## **Specific target organ toxicity - single exposure**

No data available

## **Specific target organ toxicity - repeated exposure**

No data available

## **Aspiration hazard**

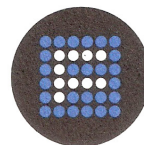
No data available

## **Additional Information**

Toxicity reported for borates in humans: ingestion or absorption may cause nausea, vomiting, diarrhea, abdominal cramps, and erythematous lesions on the skin and mucous membranes. Other symptoms include: circulatory collapse, tachycardia, cyanosis, delirium, convulsions, and coma. Death has been reported to occur in infants from less than 5 grams and in adults from 5 to 20 grams. Liver - Irregularities - Based on Human Evidence Liver - Irregularities - Based on Human Evidence

Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies with the chemically related boric acid in the rat, mouse and rabbit, at high doses, demonstrate developmental effects on the fetus, including fetal weight loss and minor skeletal variations. The doses administered were many times in excess of those to which humans would normally be exposed. Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate

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dust. A recent epidemiological study under the conditions of normal occupational exposure to borate dusts indicated no effect on fertility.

## SECTION 12: ECOLOGICAL INFORMATION

### 12. ECOLOGICAL INFORMATION

#### 12.1 Toxicity

Toxicity to fish

LC50 - Ptychocheilus lucius - 279 mg/l - 96 h

LC50 - Lepomis macrochirus (Bluegill) - > 1,021 mg/l - 96 h

LC50 - Limanda limanda - 74 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

LC50 - Daphnia magna (Water flea) - 53.2 mg/l - 21 d

EC50 - Daphnia magna (Water flea) - 133 mg/l - 48 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

No data available

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

#### Contaminated packaging

Dispose of as unused product.



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## SECTION 14: TRANSPORT INFORMATION

### U.S. Department of Transportation Ground (49CFR)

Not dangerous goods

### International Air Transportation (ICAO/IATA):

Not dangerous goods

### International Maritime Organization (IMO/IMDG):

Not dangerous goods

## SECTION 15: REGULATORY INFORMATION

### International Inventories

USA (TSCA): Complies

### Federal Regulations

#### SARA Title III 313 Reportable Substances

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### SARA Title III Section 311/312 Hazard Categories:

Chronic Health Hazard

### State Regulations (RTK)

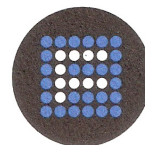
#### Massachusetts Right to Know Components

Component	CAS No.
Sodium tetraborate decahydrate	1303-96-4

#### Pennsylvania Right to Know Components

Component	CAS No.
Boric acid	10043-35-3
Sodium tetraborate decahydrate	1303-96-4

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## New Jersey Right to Know Components

Component	CAS No.
Boric acid	10043-35-3
Sodium tetraborate decahydrate	1303-96-4

## California Proposition 65

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

### Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H319	Eye Irritant. Eye irritation Causes serious eye irritation.
H360	May damage fertility or the unborn child.
H361	Suspected of damaging fertility or the unborn child.
	Reproductive toxicity
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

### HMIS:

Health: 2\*  
Flammability: 0  
Reactivity: 0

**PREPARATION INFORMATION:** Technical Service Department,  
Force Industries Division

**REVISION DATE:** March 21, 2017  
**SUPERCEDES:** April 17, 2012

**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.