

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

### Product identifier

Product name: **AMCO 33**

### Other means of identification

Product code: **581**

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

Recommended use: Aluminum Torch and Furnace Brazing 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 materials incidents only, call CHEMTREC: 1-800-424-9300.

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

Revision Date: March 3, 2016

Supersedes: August 10, 2015

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

Acute Toxicity Inhalation 4

Acute Toxicity Oral 3

Chronic Aquatic Toxicity 1

Germ Cell Mutagenicity 2

Reproductive Toxicity 2

Serious Eye Damage 1

Skin Corrosion 1B

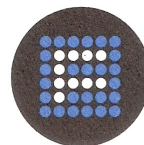
Skin Sensitization 1

Specific Target Organ Toxicity - single exposure 3, Respiratory system

Specific Target Organ Toxicity repeat exposure Oral 2 Cardiovascular  
System

Acute Aquatic Toxicity 1

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## 2.2 GHS Label elements, including precautionary statements

<b>Appearance:</b>	White
<b>Physical state:</b>	Powder
<b>Odor:</b>	None

**DANGER**

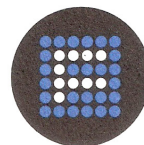
### Hazard statement(s)

- H301 Toxic if swallowed
- 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.
- P301+P312+P330+P331: IF SWALLOWED: Call a POISON CENTER immediately and rinse mouth.
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- 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>
Lithium Chloride	7447-41-8	231-212-3	10-20
Zinc Chloride	7646-85-7	231-592-0	5-10
Lithium Fluoride	7789-24-4	232-152-0	5-10
Stannous Chloride	7772-99-8	231-868-0	20-40

### 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

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

Does not support combustion. Be aware of other materials in surrounding area to determine if water, fog, foam, or CO<sub>2</sub> may be used.

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

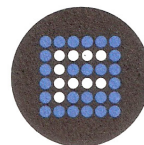
Metal halide and toxic fumes produced; use a SCBA

#### 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**

Contain spill, absorb, sweep-up. Remove to chemical sewer. Flush area to chemical sewer.

### **6.4 Reference to other sections**

For disposal see section 13.

## SECTION 7: HANDLING AND STORAGE

### **7.1 Precautions for safe handling**

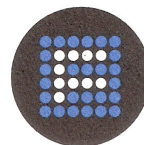
Wash hands thoroughly to remove all residue. Use full protective equipment normally used in a braze/welding operation so as to prevent any contact. Review operations to avoid contact with hazardous gas, liquids, or solids.

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

Store material under ambient conditions; keep dry.

### **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
Zinc Chloride	7646-85-7	TWA	1 mg/m <sup>3</sup>	ACGIH Threshold Limit Values (TLV)
Lithium Fluoride	7789-24-4	TWA	2.5 mg/m <sup>3</sup>	ACGIH Threshold Limit Values (TLV)
Stannous Chloride	7772-99-8	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.

**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>	Powder
<b>Odor:</b>	No data available
<b>Color:</b>	White
<b>Flash point:</b>	No data available
<b>Vapor pressure:</b>	No data available
<b>Vapor density:</b>	No data available
<b>Specific gravity:</b>	2.16 (H <sub>2</sub> O = 1 @ 72°F)
<b>Water solubility:</b>	93% (boiling)

### 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

None

### 10.5 Incompatible materials

Strong acids

### 10.6 Hazardous decomposition products

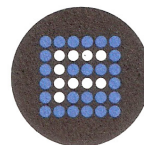
In the presence of water and heat, HCl and HF may be produced.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Component toxicity

Components	LC50/Rat (Inhalation)	LD50/Oral/Rat
Lithium Chloride	No data available	526mg/kg
Zinc Chloride	No data available	350 mg/kg
Lithium Fluoride	No data available	143 mg/kg
Stannous Chloride	2 mg/l (4 hr)	No data available

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## Reproductive toxicity

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

## Skin corrosion/irritation

Causes skin burns (Stannous chloride)

## Serious eye damage/eye irritation

Eyes - Rabbit Result (Stannous chloride): Severe eye irritation

## Respiratory or skin sensitization

May cause sensitization by skin contact (Stannous chloride)

## Germ cell mutagenicity

No data available

## Chronic Toxicity and Carcinogenicity

IARC: 3 – Group 3: Not classifiable as to its carcinogenicity to humans (Lithium fluoride)

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.

## Developmental Toxicity

No data available

## Reproductive Toxicity

Suspected human reproductive toxicant (Stannous chloride)

## 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

Oral (stannous chloride) – May cause damage to organs through prolonged or repeated exposure – cardio-vascular system

## Aspiration hazard

No data available

## Additional Information

Stannous chloride is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Cough shortness of breath, headache nausea.

Liver – Irregularities based on human evidence (Lithium chloride)

Stomach – Irregularities based on human evidence (Lithium chloride)

If product is in contact with acids, toxic gases can be produced.

Prolonged inhalation of lithium products can cause lung damage.



## SECTION 12: ECOLOGICAL INFORMATION

## 12. ECOLOGICAL INFORMATION

## 12.1 Toxicity

Components	LC50 96 hr	EC50	Bioaccumulation Concentration Factor	EC10
Lithium Chloride	17 mg/l mg/L (fish)	1.2 mg/l (water flea 64 hr)	No data available	No data available
Zinc Chloride	2.2 mg/l (carp)	0.2 mg/l (water flea, 48 hr)	21000	No data available
Stannous Chloride	9 mg/l (fish)	31-88 mg/l (water flea, 48hr)	No data available	0.076 ,g/l (trout 27 days)

## 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

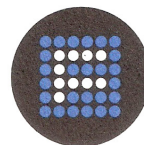
**Product**

Contact a licensed professional waste disposal service to dispose of this material. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of in accordance with all local, state, and federal regulations.





## SECTION 14: TRANSPORT INFORMATION

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

Proper shipping name: Zinc Chloride Anhydrous Mixture

Hazard Class: Class 8

ID & Packing Group Number: UN 2331, PG III

ERG Guide Number: 154

Marine pollutant (Yes/No) YES

Unless your shipments qualify for an exemption, you must mark the products with the marine pollutant mark and add the words "Marine Pollutant" to the product's basic description on your bill of lading.

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

Not dangerous goods

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

International Maritime Organization (IMO) provide a new exclusion for certain marine pollutants shipped by air or vessel (per IATA DGR 4.4 SP A197 and IMDG Code 2.10.2.7). Marine pollutants with the shipping names "UN 3077 Environmentally hazardous substance, solid, n.o.s." and "UN 3082 Environmentally hazardous substance, liquid, n.o.s." shipped in quantities of  $\leq 5$  L or 5 kg per package are not subject to regulation other than specific packaging provisions.

## SECTION 15: REGULATORY INFORMATION

### **International Inventories**

**USA (TSCA):** Complies

### **Federal Regulations**

#### **SARA Title III 313 Reportable Substances**

This material contains the following chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

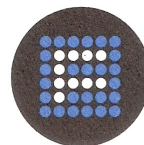
Zinc Chloride 7646-85-7

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

Chronic Health Hazard

Acute Health Hazard

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## State Regulations (RTK)

### Massachusetts Right To Know Components

Component	CAS No.
Zinc chloride	7646-85-7
Stannous chloride	7772-99-8

### Pennsylvania Right to Know Components

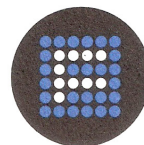
Component	CAS No.
Zinc chloride	7646-85-7
Stannous chloride	7772-99-8

### New Jersey Right to Know Components

Component	CAS No.
Zinc chloride	7646-85-7
Stannous chloride	7772-99-8

## 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.

Acute Toxicity Inhalation 4	Acute Toxicity – Inhalation, Category 4.
Acute Toxicity Oral 3	Acute Toxicity – Oral, Category 3
Chronic Aquatic Toxicity 1	Aquatic Toxicity – Chronic, Category 1
Acute Aquatic Toxicity 1	Aquatic Toxicity – Acute, Category 1
Serious Eye Damage 1	Eye Damage/Irritation, Category 1
Germ Cell Mutagenicity 2	Germ Cell Mutagenicity, Category 2
Reproductive Toxicity 2	Reproductive Toxicity, Category 2
Skin Corrosion 1B	Skin Corrosion/Irritation, Category 1B
Skin Sensitization 1	Skin Sensitization, Category 1
Specific Target Organ Toxicity Single exposure 3, respiratory	Specific Target Organ Toxicity – Single Exposure Category 3
Specific Target Organ Toxicity Repeat exposure Oral 2 Cardiovascular system	Specific Target Organ Toxicity – Repeat Exposure Category 2
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
H412	Harmful to aquatic life with long lasting effects.

**HMIS:****Health:** 2\***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.