

Brewers Association Safety Data Sheet Review: Using Safety Data Sheets to Create a Safe Brewery Environment



What should we ask our Chemical Supplier?

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Assess for hazards: chemicals present

HAZARD ASSESSMENT

1. Conduct a Walk-through

Survey the area. Think through every step involved in completing the Task. Describe the activities associated with each task.

2. Identify Hazards and Sources

Use the examples of hazard types shown on the reverse of this card to identify hazard types and where they may occur.

3. Organize Hazard Data

For each step in the Task, compile a list of specific hazards that could be encountered and understand their consequences, i.e. describe possible injury.

4. Analyze Hazard Data

Evaluate hazards by type, risk, likelihood, and severity of possible injury. Note where multiple hazards coexist.

5. Specify Hazard Controls

For each hazard, specify one or more hazard control strategies, which could include: engineering controls, administrative controls and safe work practices, and personal protective equipment.



What should we ask about our chemicals?

- IDLH; IDLH formation time
- Symptoms
- First aid
- Vomit? (Yes) (No)
- Special eye wash formula?
- Extinguishing media
- Small spill/Large spill
- Special emergency requirements
- Special storage
- PEL; TLV/TWA
- PPE glove; Outerwear; Eyes; Face;...
- Respirator
- Odor; Odor threshold
- pH; Corrosive?
- Specific gravity
- Soluble in water?
- Vapor pressure/Vapor density
- Flash point/Boiling point
- Flammable? Upper, Lower explosive limit
- Incompatibles; reacts with?
- Route(s) of exposure
- Other concerns? HNOC?



Because I stopped this...



MIXTURE OF PHOSPHORIC AND NITRIC ACID		
This product requires submission of an annual report on the release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). Components present in this product at a level which could require reporting under the statute are:		
HAZARDOUS INGREDIENTS	%	TLV LIMITS IN AIR
Phosphoric Acid (CAS 7664-38-2)	15	1 mg/m3 (ACGIH)
Nitric Acid (CAS 7697-37-2)	20	2 ppm (ACGIH)
PHYSICAL DATA		
APPEARANCE: Light Blue		ODOR: Acidic
SOLUBILITY IN WATER: Complete		SPECIFIC GRAVITY: 1.19
EVAPORATION RATE: 1 (water = 1)		BOILING POINT: 213° F
VAPOR PRESSURE: 24 mm. Hg.		pH CONCENTRATE: < 1
FIRE AND EXPLOSION DATA		
FLAMMABILITY:	Non - combustible, substance itself does not burn but may decompose to produce corrosive and/or toxic fumes.	
EXTINGUISHING MEDIA:	Water, Carbon Dioxide, Foam	
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated.	
NFPA HAZARD RATING:	Health 3; Flammability 0; Reactivity 1	
HEALTH HAZARD DATA		
<ul style="list-style-type: none">- CAUSES SEVERE BURNS TO SKIN AND EYES. HARMFUL OR FATAL IS SWALLOWED.- TOXIC; inhalation, ingestion, or skin contact with material may cause severe injury or death.- Contact with molten substance may cause severe burns to skin and eyes.- Avoid contact with skin or eyes.- Effects of contact or inhalation may be delayed.- Fire may produce irritating, corrosive, and/or toxic gas.- Runoff from fire control or dilution water may be corrosive.- Do not mix with chlorine containing products as it will cause a release of chlorine gas.		
EMERGENCY & FIRST AID PROCEDURES		
EYE CONTACT:	Flush with cool running water for at least 15 minutes. For eye exposure irrigate with saline solution. Get medical attention as soon as possible.	
SKIN CONTACT:	Flush with cool running water. If irritation develops get medical attention.	
INGESTION:	If conscious, give several glasses of milk, water, egg whites or gelatin solution. Get medical attention immediately. DO NOT induce vomiting.	



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Quick review of HAZCOM 2012

- 1) By what date are we to use it?
- 2) Is it optional to use it?
- 3) Why is HAZCOM 2012 so cool to use?



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Safety Data Sheets (SDS)

1. Identification
2. Hazard(s) Identification
3. Composition/Ingredients
4. First-aid Measures
5. Firefighting Measures
6. Accidental Release Measures
7. Handling and Storage
8. Exposure Controls/Personal Protection
9. Physical and Chemical Properties
10. Stability and Reactivity
11. Toxicological Information
12. Environmental Information
13. Disposal Considerations
14. Transportation Information
15. Regulatory Information
16. Other Information



1) Product Identification



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SDS Safety Data Sheet

1) Product Identification

Product Name: Cir-Q-Late

Product Code: I00112

Recommended Use: C.I.P Cleaner

Producer: Birko Corporation
9152 Yosemite Street
Henderson, CO 80640-8027

Contact Information: (303) 289-1090 or 1-800-525-0476

Emergency Number: CHEMTREC 1-800-424-9300

2) Hazard(s) Identification



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2) Hazard(s) Identification

2) Hazard(s) Identification

Health	Environmental	Physical
Acute Toxicity Cat. 4 (oral) Skin Corrosion Cat. 1A Eye Effects Cat. 1	Aquatic Toxicity Acute Cat. 3	Corrosive Cat. 1

Labeling:



Symbol:

Signal Word: Danger

Corrosive, Irritant, Aquatic Toxicity

Hazard Statement(s): Causes irreversible eye damage. Harmful or fatal if swallowed. Causes burns. Do not get into eyes, on skin, or on clothing. Corrosive to certain types of metals.

Precautionary Statement(s): Use rubber gloves, protective splash-proof goggles, and protective clothing. Remove contaminated clothing and wash before re-use. Do not contaminate food, feed, or water. Keep container closed when not in use.

3) Composition/ Information on Ingredients



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3) Composition/Information on Ingredients

Contains 100%, 100%, of water. Keep container closed when not in use.

3) Composition/ Information on Ingredients

Name(s)	Synonym(s)	CAS Number	Weight %
Sodium Hydroxide	Caustic Soda	01310-73-2	< 40%
Potassium Hydroxide	Liquid Potash	01310-58-3	< 10%
Potassium Silicate	Potassium Salt	1312-76-1	< 5 %

4) First-Aid Measures



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3) Composition/Information on Ingredients

FIBERGLASS LADDER TECHNICAL MANUAL

CORROSION RESISTANCE GUIDE FOR FIBERGLASS

Chemical	75°F	150°F
Acetic Acid, 5%	R	R
Acetic Acid, 10%	R	NR
Aluminum Sulphate	R	R
Ammonium Hydroxide, 5%	R	NR
Aluminum Nitrate	R	R
Benzene Sulfonic Acid, 5%	R	R
Calcium Chloride	R	R
Chlorine Dioxide, 15%	R	NR
Chromic Acid, 5%	R	R
Copper Sulphate	R	R
Ethylene Chlorhydrin	R	R
Ethylene Glycol	R	R
Ferrous Sulphate	R	R
Fatty Acids, 100%	R	R
Fluosilicic Acid, 10%	NR	NR
Hydrochloric Acid, 1%-10%	R	R
Hydrochloric Acid, 37%	R	NR
Kerosene	R	R
Magnesium Chloride	R	R
Methyl Alcohol	R	NR
Naptha	R	R

Chemical	75°F	150°F
Nitric Acid, 5%	R	NR
Phosphoric Acid, to 85%	R	R
Sodium Bicarbonate	R	R
Sodium Bisulfate	R	R
Sodium Carbonate	R	NR
Sodium Chloride	R	R
Sodium Hydroxide, 5%	NR	NR
Sodium Hypochlorite, 5%	R	R
Sodium Nitrate	R	R
Sodium Silicate	R	NR
Sodium Sulfate	R	R
Sour Crude Oil	R	R
Sulfuric Acid, to 10%	R	R
Sulfuric Acid, 30—50%	R	NR
Trisodium Phosphate	R	NR
Xylene	R	NR

NOTE:

- 1) "R" is recommended
- 2) "NR" is not recommended

SOLVENTS NOT RECOMMENDED FOR IMMERSION

Acetone
Carbon Disulphide
Carbon Tetrachloride

Ethylether
Methyl Ethyl Ketone
Toluene



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4) First-aid Measures

4) First-Aid Measures

Inhalation	Skin Contact	Eye Contact	Ingestion
Remove from exposure. Administer oxygen if breathing is difficult. Resuscitate if necessary. Get medical help immediately	Immediately drench with flowing water for at least 15 minutes. Remove contaminated clothing as quickly as possible. Launder before reuse. Destroy contaminated shoes. Medical treatment for all burns must begin immediately, no matter how minor they seem.	Immediately rinse eyes thoroughly in cool running water for at least 15 minutes. Get medical attention at once, preferably from an ophthalmologist.	DO NOT induce vomiting. Have a conscious victim drink fruit juice or water to dilute. Never give an unconscious person anything by mouth. Get medical help immediately.



5) Firefighting Measures

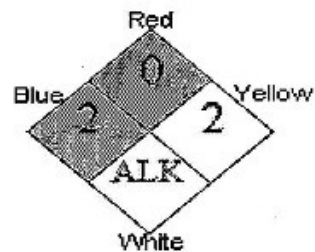
5) Firefighting Measures

Suitable Extinguishing Media: Water, Carbon Dioxide, Dry Chemical, and Foam Blanket

Unsuitable Extinguishing Media: N/A

Specific Hazards: Always wear self-contained breathing apparatus when fighting a chemical fire.

Special Protective Actions for Fire-Fighters: Carbon Monoxide/Carbon Dioxide gases liberated during combustion. PO_x gases liberated during combustion.



6) Accidental Release Measures

6) Accidental Release Measures

Personal Precautions: Be sure to use all necessary Personal Protective Equipment

Environmental Precautions: Avoid contamination of food, feed, waterway, or groundwater.

Methods and Materials for Containment and Clean-Up: Capture material and contain for re-use or disposal. Remainder may be neutralized with a mild acid (vinegar) and rinsed to a sewer.

7) Handling and Storage



7) Handling and Storage

disposal. Remaining may be neutralized with mild acid (vinegar) and added to a sewer.

7) Handling and Storage

Precautions for Safe Handling: Do not contaminate food, feed, or natural water. **RELEASES HEAT** WHEN MIXED WITH WATER. Supplier is not responsible for disposition of this product. Do not reuse container. Maintain an **eyewash station, and safety shower in product handling areas.**

Conditions for Safe Storage: Keep container closed when not in use. Store in a cool, dry location.

Keep Emergency eye wash and shower temperatures
below 90°F,
so additional corrosive action is minimized.



8) Exposure Controls/Personal Protection

8) Exposure Controls and Personal Protection

Appropriate Engineering Controls: Ventilation: Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.




Exposure Limits:

Name (CAS-No.)	PEL	TWA	Ceiling	IDLH
Sodium Hydroxide (01310-73-2)	2 mg/m ³	ACGIH 2mg/m ³ OSHA 2mg/m ³	ACGIH 2mg/m ³ OSHA 2mg/m ³	10 mg/m ³
Potassium Hydroxide (01310-58-3)	NONE	ACGIH 2mg/m ³	ACGIH 2mg/m ³	NONE
Potassium Silicate (1312-76-1)	NONE	NONE	NONE	NONE



8) Exposure Controls/Personal Protection

Personal Protective Equipment

Eye/Face	Skin	Gloves	Boots
 			

Eye/Face: Safety glasses with Side shields. Wear chemical safety goggles with face shield when appropriate.

Skin: Wear chemical resistant clothing and rubber boots.

Gloves: Wear appropriate chemical resistant gloves.

Respiratory: Use only when concentrations exceed exposure limits. If limits are exceeded a NIOSH approved respirator is required. If eye irritation occurs use a full face style mask. When vapor concentrations are above 10 ppm or in a spill emergency a NIOSH approved self-contained breathing apparatus or airline respirator, with full-face piece is required. If respirators are warranted in the workplace a respiratory protection programs must meet 29 CFR 1910.134, and be followed.

Protective Material Types: Butyl rubber, natural rubber, neoprene, nitrile, polyvinyl chloride (PVC), or Tychem (R)


0) Physical and Chemical Properties





Chemical Glove



Only Edition

EDITION The first square in each column for each glove type is color coded to provide an overall rating for both Degradation and Permeation. The letter in each colored square is for Degradation alone.

 **GREEN:** The glove is very well suited for application with that chemical.

 **YELLOW:** The glove is suitable for that application under careful control of its use.

 RED: Avoid use of the glove with this chemical.

SPECIAL NOTE: The chemicals in this guide highlighted in BLUE  are experimental carcinogens, according to the ninth edition of Sax' *Dangerous Properties of Industrial Materials*. Chemicals highlighted in GRAY  are listed as suspected carcinogens, experimental carcinogens at extremely high dosages, and other materials which pose a lesser risk of cancer.

[illegible]

9) Physical and Chemical Properties

9) Physical and Chemical Properties

Physical Form: Liquid

Appearance: Amber/Brown

Odor: Harsh odor if inhaled

pH: (1% Solution) 12.9

Melting Point: Not available

Freezing Point: Not Determined

Boiling Point: >212-220° F

Flash Point: Not available

Evaporation Rate: < 1

Flammability: Not Flammable

Upper/Lower Flammability or explosive limits: Not available

Vapor Pressure: Not Established

Vapor Density: > 1

Relative Density: Not available

Specific Gravity: 1.41

Solubility: 100%

Partition coefficient: Not available

Auto-Ignition Temperature: Not available

Decomposition Temperature: Not available



10) Stability and Reactivity Data

10) Stability and Reactivity

Chemical Stability: This product should maintain its physical characteristics when stored closed at moderate temperatures, between 28°F and 105°F.

Possibility of Hazardous Reactions: This product does not polymerize under normal storage and use conditions.

Conditions to Avoid: Mixing acids and other incompatible materials may cause splattering and release of large amounts of heat. Will react with some metals forming flammable hydrogen gas. Carbon monoxide gas may form upon contact with reducing sugars or food and beverage products in enclosed spaces.

Materials to Avoid: Acids, halogenated compounds, prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys.

Hazardous Decomposition Products: Carbon Monoxide/Carbon Dioxide gases liberated during combustion. PO_x gases liberated during combustion.



11) Toxicological Information

11) Toxicological Information

Acute Toxicity:

Test	Results	Basis
Oral LD50 (Rabbits)	500 mg/kg	Testing of similar material
Dermal LD50 (Rabbits)	1350 mg/kg	Testing of similar material

Summary Comments: The severity of the tissue damage is a function of its concentration, the length of tissue contact time, and local tissue conditions. After exposure there may be a time delay before irritation and other effects occur. This material is a strong irritant and is corrosive to the skin, eyes, and mucous membranes. This material may cause severe burns and permanent damage to any tissue with which it comes into contact. Inhalation will cause severe irritation, possible burns with pulmonary edema, which may lead to pneumonitis. Skin contact with this material may cause severe irritation and corrosion of tissue. Eye contact can cause severe irritation, corrosion with possible corneal damage and blindness. Ingestion may cause irritation, corrosion/ulceration, nausea, and vomiting.

Sub-chronic/Chronic Toxicity:

Test	Results	Comments
N/A	N/A	N/A

Summary Comments: In general, chronic effects are due to long-term irritation. This material may cause dermatitis on the skin, or recurrent corneal ulceration and visual disturbances. In rare cases reports have noted long-term inhalation causes bronchial inflammatory reaction or obstructive airway dysfunction.

Medical conditions aggravated by exposure: Respiratory system (including asthma and other breathing disorders)



12) Ecological Information

12) Ecological Information

Toxicity:

Test	Results
Daphnia LC50	100 ppm
Brook trout LC50	24 hours 25 ppm
King salmon LC50	48 ppm
Shrimp LC50	48 hours 33-100 ppm
Cockle LC50	48 hours 330-1000 ppm
Water Flea EC50	48 hours 4.66-6.83 mg/l

Persistence and Degradability: This material is alkaline and may raise the pH of surface waters with low buffering capacity. This material is believed to exist in the disassociated state in the environment. This material is inorganic and not subject to biodegradation.

Bioaccumulative Potential: This material is believed not to bioaccumulate.

Mobility in Soil: Not available

Other Adverse Effects: This material has exhibited slight toxicity to terrestrial organisms.



13) Disposal Considerations

13) Disposal Considerations

Disposal Method: Re-use or reprocess if possible. Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D002



14) Transportation Information

14) Transport Information

UN Number: UN1760

UN Proper Shipping Name: Corrosive Liquids, n.o.s., (Potassium Hydroxide, Sodium Hydroxide)

Transport Hazard Class (es): 8

Packing Group: III

Environmental Hazard(s): N/A

Special Precautions for User: N/A



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15) Regulatory Information

15) Regulatory Information

US Regulations:

CERCLA Sections 102a/103 Hazardous substances (40 CFR 302.4): Sodium Hydroxide: 1000 lbs.

RQ on 100% active basis.

Potassium Hydroxide: 1000 lbs. RQ on 100% active basis.

Potassium Silicate: No reportable quantity has been established for this material.

SARA Title III, SARA Sections 311/312, Hazardous Categories (40 CFR 370.21):

Acute: Yes

Chronic: No

Fire: No

Reactive: No

Sudden Release: No

State Regulations:

California Proposition 65: This product is not listed, but it may contain contaminants known to the State of California to cause cancer or reproductive toxicity as listed under Propositions 65 State Drinking Water and Toxic Enforcement Act.

New Jersey Worker and Community Right to Know: Reporting Requirements:

Water	7732-18-5	48.5-94.5%
Sodium Hydroxide	1310-73-2	5.5-51.5%
Sodium Chloride	7647-14-5	0-5.0%
Water	7732-18-5	49-90%
Potassium Hydroxide	1310-58-3	10-51%

Right to Know Hazardous Substance List:

Sodium Hydroxide	1310-73-2	5.5-51.5%
Potassium Hydroxide	1310-58-3	10-51%

Special Health Hazard Substance List:

Sodium Hydroxide	1310-73-2	5.5-51.5%
Potassium Hydroxide	1310-58-3	10-51%

Pennsylvania Right to Know: Reporting Requirements:

Water	7732-18-5	48.5-94.5%
Sodium Hydroxide	1310-73-2	5.5-51.5%
Sodium Chloride	7647-14-5	0-5.0%



15) Regulatory Information – cont'd

Water	7732-18-5	49-90%
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Potassium Hydroxide	1310-58-3	10-51%
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Hazardous Substance List:

Sodium Hydroxide	1310-73-2	5.5-51.5%
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Potassium Hydroxide	1310-58-3	10-51%
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Environmental Hazardous Substance List:

Sodium Hydroxide	1310-73-2	5.5-51.5%
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Potassium Hydroxide	1310-58-3	10-51%
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Special Hazardous Substance List:

Not regulated

Canadian Regulations:

Controlled Products Regulations (CPR): This product has been classified in accordance with the criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the CPR.

WHMIS Classification: E

National Inventory Status: U.S. Inventory (TSCA): All the components of this substance are listed on or exempt from the inventory.

TSCA 12(b) Export Notification: Not Listed

Canada Inventory (DSL/NDSL): All components of this product are listed on the DSL



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16) Other Information

16) Other Information

HMIS	
0	FLAMMABILITY
2	HEALTH
2	REACTIVITY
J	Personal Protection

Hazard Index

4-Severe

3-Serious

2-Moderate

1-Slight

0-Minimal

Preparer: Ramsey Johnson

Approved By: Terry L. McAninch

Date: 5/18/2015

Previous revision: 8/28/2014

Personal Protective Index

A	E	I
B	F	J
C	G	K
D	H	X Ask your supervisor
Safety Glasses	Face Shield	Splash Goggles
Apron Hood or Mask	Gloves	Synthetic Apron
Chemical Resistant Glove	Eye Protection	Foot Protection
Resistant Footwear	Resistant Footwear	Resistant Footwear



Summarize Cir-Q-Late

- Corrosive to metal
- Corrosive to my body
- Mixing with acids can cause splattering, and release heat
- Mix acid into this, not this into acid
- Reacts with metals: which ones?

▮ AZCOM is your Right-To-Understand. Safety Data Sheets make it easy.



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Thank you from Dana and Tony

Dana thanks:

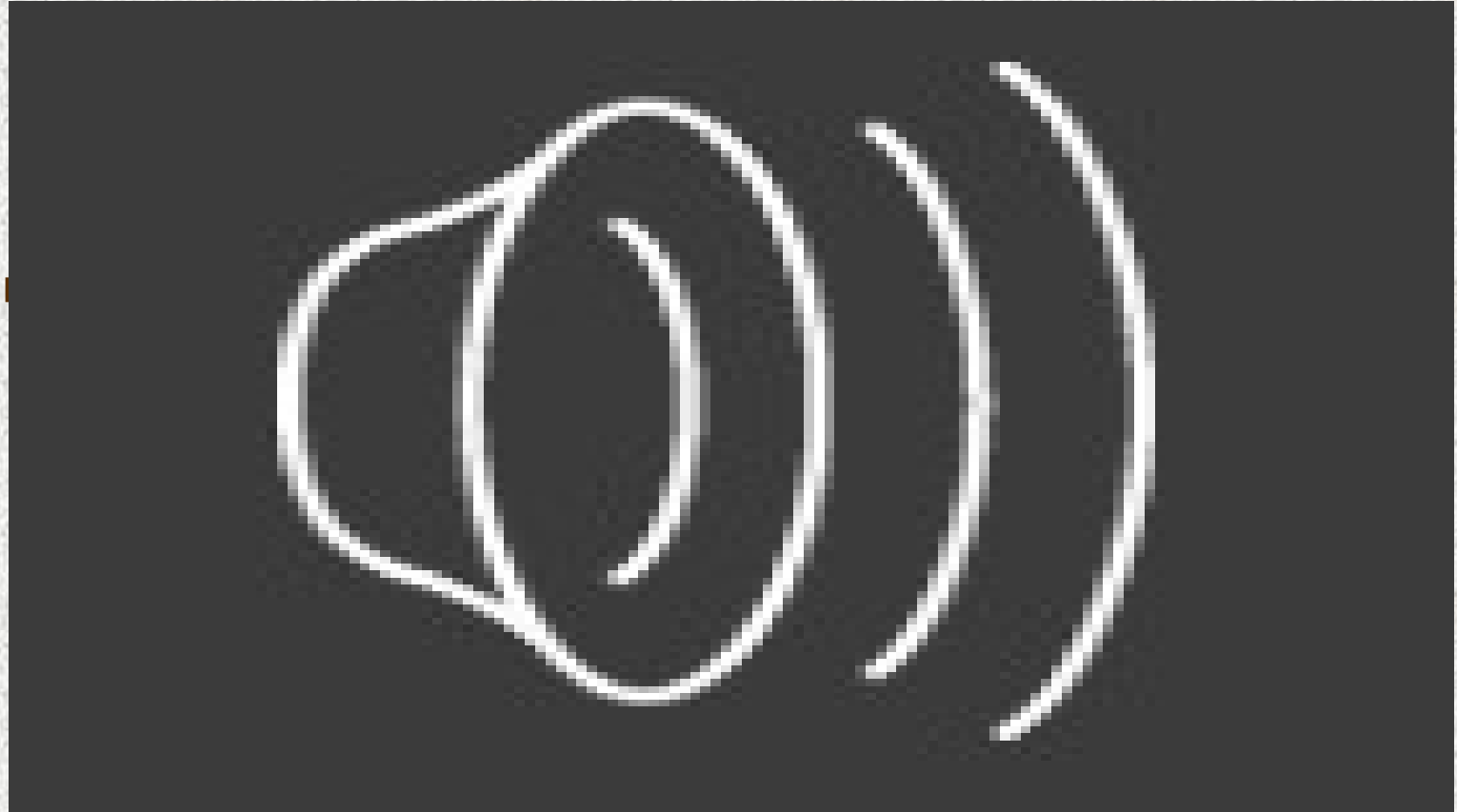
Birko for allowing me to come today

My wife for putting up with me

Our customers for making great beer

Tony thanks:

- Dana and Birko Corporation
- BA Safety Subcommittee
- Dry Dock Brewing
- Comrade Brewing
- And the woman who allows this



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