

# Safety Data Sheet

**FORMULA 2310-C**

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## 1. IDENTIFICATION

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**Product Name:** FORMULA 2310-C **Revised:** 3/18/15  
**Chemical Name:** Not Applicable  
**Description:** Hazy, colorless liquid with typical amine odor  
**Recommended Use:** Alkyl Alkanolamines  
**Restrictions on Use:** For industrial use only. Not for use in treating drinking water or in USDA regulated facilities where product may contact milk and dairy products.

### COMPANY IDENTIFICATION

B & L CONTROL SERVICE, INC.  
1448 SARATOGA ROAD  
BALLSTON SPA, NY 12020

**PHONE NUMBER:** (518) 273-0500

### EMERGENCY PHONE NUMBERS

CHEMTREC (800) 424-9300  
Outside USA: CHEMTREC COLLECT (703) 527-3887

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## 2. HAZARD(S) IDENTIFICATION

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### GHS Classification:

Flammable liquids - Category 4  
Serious eye damage/irritation - Category 1  
Skin corrosion/irritation - Category 1C  
Specific target organ toxicity, single exposure - Category 1  
Specific target organ toxicity, single exposure - Category 1  
Reproductive toxicity - Category 2

**Signal Word:** Danger

**Symbol(s):**



### Hazard Statements:

Combustible liquid  
Causes severe skin burns and eye damage.  
Causes damage to digestive system if swallowed  
Causes damage to respiratory system if inhaled  
Suspected of damaging fertility or the unborn child

### Precautionary Statements:

#### Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from sparks and open flames. No smoking. Do not breathe dusts or mists. Do not get in eyes, on skin, or on clothing. Wash hands, forearms, gloves and contaminated surfaces thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/eye protection/face protection.

#### Response

In case of fire: Use Water spray, foam, dry chemical or carbon dioxide to extinguish.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CONTROL CENTER or doctor for treatment advice.

Specific treatment (see First Aid on SDS or on this label).  
 Take off contaminated clothing and wash it before reuse.  
 IF exposed or concerned: Call a POISON CONTROL CENTER or doctor for treatment advice.

**Storage**  
 Store in a well-ventilated place. Keep cool.  
 Store locked up.

**Disposal**  
 Dispose of contents/container in accordance with local, regional, national and international regulations.

**Hazards Not Otherwise Classified:** None Known.

**Percentages of Components with Unknown Acute Toxicity:**

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**3. COMPOSITION / INFORMATION ON INGREDIENTS**

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CHEMICAL INGREDIENTS	CAS NO.*	PERCENT (%)**
CYCLOHEXYLAMINE	108-91-8	4% - 14%

Legend: L=<1%; M=1-10%; H=>10%

\* Exposure limit and regulatory information in Sections 8 & 15

\*\* Exact percentage is a trade secret. Concentration range is provided to assist users in providing appropriate protections.

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**4. FIRST AID MEASURES**

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**Eye Contact:** Immediately flush eyes with a directed stream of cool, clear water for at least 30 minutes. Forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissues. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Do not allow individual to rub their eyes. Get medical attention urgently, preferably from an ophthalmologist. Do not transport the victim until the recommended flushing period is completed, unless a portable emergency eye wash bottle is immediately available.

**Skin Contact:** Immediately wash skin with soap and plenty of water while removing contaminated clothing, for at least 15-20 minutes. Call a poison control center or doctor for treatment advice. Do not take contaminated clothing home to be laundered. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be immediately available.

**Inhalation:** Remove victim to fresh air. If individual experiences nausea, headache, dizziness, has difficulty in breathing or is cyanotic, seek medical attention. If not breathing, give artificial respiration via a suitable mechanical device such as a bag and mask. Do not use mouth-to-mouth resuscitation.

**Ingestion:** Do not induce vomiting. Rinse mouth with copious quantities of water first and get immediate medical attention. Drink several glasses of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep airways clear.

**Note to Physician:** There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Aspiration may cause lung damage. Probable mucosal damage may contraindicate the use of gastric lavage.

**Most Important Symptoms/Effects:**

**Eye Contact:** May cause severe irritation or burns. Prolonged contact may cause irreversible damage and/or blindness. Vapor may cause eye irritation experienced as mild discomfort and redness.

**Skin Contact:** Prolonged contact may cause severe irritation or burns. Prolonged or extensive contact may result in absorption of harmful amounts.

**Inhalation:** In poorly ventilated area vapors can cause irritation to nose and throat with possible headaches and nausea. May cause vomiting.

**Ingestion:** May be toxic by ingestion. Do not take internally. May cause irritation and possibly burns of the mouth, throat, esophagus, and stomach. May cause nausea, vomiting, abdominal pain and collapse. Large amounts can result in acute toxic effects which may be fatal.

**Indication of Immediate Medical Attention and Special Treatment, if Necessary:**

Other than acute, none known. See section 11 for toxicological information.

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## 5. FIRE FIGHTING MEASURES

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**Suitable (and Unsuitable) Extinguishing Media:** Water spray, foam, dry chemical or carbon dioxide.

**Specific Hazards Arising from the Chemical:** Product is corrosive to eyes, skin, and respiratory system. Closed containers may rupture (due to buildup of pressure) when exposed to extreme heat. If evaporated to dryness, some product residuals may burn. Thermal decomposition may release oxides of carbon and nitrogen.

**Special Protective Equipment and Precautions for Fire-Fighters:** Wear self-contained breathing apparatus and full turn-out gear. Approach fire from upwind direction. If possible, move containers away from fire. Cool fire exposed containers with water spray. If containers rupture or leak, product may evolve irritating or toxic gas under extreme heat. Contain runoff.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Spill Containment and Clean-up Instructions:**

Wear suitable protective equipment found in section 8. Small spills may be flushed with copious quantities of water, preferably to a sanitary sewer or waste treatment facility. Larger spills should be diked to prevent runoff and then absorbed in sand or other inert absorbent for disposal. The area may then be flushed with copious quantities of water. Floor may be slippery; use care to avoid falling. Avoid release of this product into the environment to prevent contamination of soil, sewers, natural waterways and/or groundwater. See Section 12 for Ecological Information.

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## 7. HANDLING AND STORAGE

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**Handling and Storage:**

Store in a cool, dry, well ventilated area, between 10°C and 49°C. Keep containers tightly closed when not in use and follow all recommended safety precautions when handling the material. Keep out of sun and away from heat or open flame. Keep away from incompatible materials. See Section 10 for incompatible materials.

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## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

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**Engineering Controls:** General ventilation satisfactory. Mechanical may be required to keep concentration below maximum airborne exposure limits in confined areas.

### PERSONAL PROTECTION EQUIPMENT

**Respiratory:** Not normally required if good ventilation is maintained. Otherwise, wear self-contained breathing apparatus

**Eyes and Face:** Chemical splash goggles or face shield/goggle combination

**Hands and Skin:** Chemical resistant rubber, neoprene latex or PVC

**Other Protective Equipment:** Eyewash station and safety shower in area of use. Rubber apron and boots are also recommended where workers will be handling the product.

### EXPOSURE GUIDELINES

**Exposure Limits:**

**COMPONENT**  
CYCLOHEXYLAMINE

**TLV**  
10ppm(skin)

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance and Odor:</b>	Hazy, colorless liquid with typical amine odor		
<b>Odor Threshold:</b>	N.D.	<b>Vapor Pressure:</b>	1.4-10
<b>pH (undiluted):</b>	12.1 - 12.6	<b>Vapor Density:</b>	3-4
<b>Freeze Point:</b>	< -2°C (28°F)	<b>Specific Gravity(@22°C):</b>	0.985 - 0.995
<b>Boiling Point:</b>	> 100°C (212°F)	<b>Solubility in Water:</b>	Complete
<b>Flash Point:</b>	> 63°C (145°F)	<b>Partition Coefficient:</b>	N.D. (n-octanol/water)
	((as solution) Tag Closed Cup)	<b>Auto-Ignition Temperature:</b>	N.D.
<b>Evaporation Rate:</b>	1.0	<b>Decomposition Temperature:</b>	N.D.
<b>Flammability (solid, gas):</b>	No	<b>Viscosity:</b>	N.D.
<b>Flammable Limits in Air:</b>	LFL –		
	UFL –		

**10. STABILITY AND REACTIVITY**

**Reactivity:** Not normally reactive at normal temperatures and pressure.

**Chemical Stability:** Stable under normal conditions

**Possibility of Hazardous Reactions:** Will not occur under normal conditions.

**Conditions to Avoid:** Avoid excessive heat, sparks or open flames.

**Incompatible Materials:** Concentrated acids or oxidizing agents.

**Hazardous Decomposition Products:** Thermal decomposition may release oxides of carbon and nitrogen.

**11. TOXICOLOGICAL INFORMATION**

**Ingestion Testing:** Rat, LD50: 3,367 mg/kg\*

**Skin Testing:** Rabbit, LD50: 7,011 mg/kg\*

**Inhalation Testing:** Rat, LD50 /4hr: 366 mg/l\*

\*Calculated based on GHS acute toxicity formula.

**CHRONIC TOXICITY DATA**

**Sensitization Testing:** None established for this product.

**Other Testing:** None established for this product.

**Routes of Exposure:** Eyes, Ingestion, Inhalation, Skin.

**Eye Contact:** May cause severe irritation or burns. Prolonged contact may cause irreversible damage and/or blindness. Vapor may cause eye irritation experienced as mild discomfort and redness.

**Skin Contact:** Prolonged contact may cause severe irritation or burns. Prolonged or extensive contact may result in absorption of harmful amounts.

**Inhalation:** In poorly ventilated area vapors can cause irritation to nose and throat with possible headaches and nausea. May cause vomiting.

**Ingestion:** May be toxic by ingestion. Do not take internally. May cause irritation and possibly burns of the mouth, throat, esophagus, and stomach. May cause nausea, vomiting, abdominal pain and collapse. Large amounts can result in acute toxic effects which may be fatal.

**Medical Conditions Aggravated by Exposure:** Inhalation of vapors may be irritating to asthmatics.

**Chronic Effects from Repeated Overexposure:** Other than short term effects, none established.

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## **12. ECOLOGICAL INFORMATION**

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### **Aquatic Toxicity Data:**

Invertebrate: Daphnia magna, EC50/24hr: 544 mg/l\*

Fish: Rainbow trout, LC50/96hr: 489 mg/l\*

Algal: Green algae, EC50/96hr: 222 mg/l\*

Microorganisms: activated sludge, EC50/3hr: 9,667 mg/l\*

\*Calculated based on GHS acute aquatic toxicity formula.

**Product Fate Data:** None established for this product.

**Biodegradation Data:** None established for this product.

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## **13. DISPOSAL CONSIDERATIONS**

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**Waste Disposal:** Dispose of in accordance with local, regional, national and international regulations.

Contact the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Disposal: Triple rinse container (or equivalent) promptly after emptying and offer for reconditioning if appropriate. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal.

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## **14. TRANSPORT INFORMATION**

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### **US DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION**

**UN/NA ID Number:** UN2735

**Proper Shipping Name:** AMINES, LIQUID, CORROSIVE, N.O.S (CONTAINS CYCLOHEXYLAMINE)

**Hazard Class:** 8

**Packing Group:** PGII

### **VESSEL TRANSPORT (IMO/IMDG)**

**UN/NA ID Number:** UN2735

**Proper Shipping Name:** AMINES, LIQUID, CORROSIVE, N.O.S (CONTAINS CYCLOHEXYLAMINE)

**Hazard Class:** 8

**Packing Group:** PGII

**Marine Pollutant:** No

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## **15. REGULATORY INFORMATION**

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### **US FEDERAL REGULATIONS**

**TSCA:** All ingredients listed or exempt from listing.

**CERCLA and/or SARA RQ:** No ingredients listed in this section.

**SARA Section 302 Hazard Class:** No ingredients listed in this section.

### **SARA Section 311/312 Chemicals:**

Acute Health Hazard: Yes

Chronic Health Hazard: Yes

Fire Hazard: Yes

Sudden Release of Pressure Hazard: No

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Reactive Hazard: No

**SARA Section 313 Chemicals:** No ingredients listed in this section.

**STATE REGULATIONS**

This product contains a chemical(s) known to State of California to cause birth defects or other reproductive harm.

**16. OTHER INFORMATION**

**HAZARD RATING SUMMARY**

Hazard Rating System:	NFPA	CODE TRANSLATION
Health:	2	0 = Minimal Hazard
Flammability:	2	1 = Slight Hazard
Reactivity:	0	2 = Moderate Hazard
Special:		3 = Severe Hazard
		4 = Extreme Hazard

**Other Precautions:** This product has been designed for use in specific types of boiler water systems and should be used only in accordance with the instructions provided by the technical representative servicing the facility. The product contains only FDA approved ingredients for use in boilers where steam can contact food or edible products. This product is suitable for USDA applications, except milk and dairy products.

**SDS REVISION SUMMARY**

<b>Revised Date</b>	<b>Revision Notes</b>
3/18/15	GHS Version 1.0: Supersedes: 5/7/14

**ABBREVIATION CODE SUMMARY**

- N.A. – Not Applicable
- N/A – Not Available
- N.D. – Not Determined
- N.E. – None Established

*Disclaimer: The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given.*