



The Clorox Company  
1221 Broadway  
Oakland, CA 94612  
Tel. (510) 271-7000

# Material Safety Data Sheet

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| <b>I Product:</b> CLOROX REGULAR-BLEACH  |  |
| <b>Description:</b> CLEAR, LIGHT YELLOW LIQUID WITH A CHARACTERISTIC CHLORINE ODOR                           |  |
| <b>Other Designations</b>  | <b>Distributor</b>   |
| Clorox Bleach<br>EPA Reg. No. 5813-50  | Clorox Sales Company<br>1221 Broadway<br>Oakland, CA 94612 |
| <b>Emergency Telephone Nos.</b>  |  |
| For Medical Emergencies call:<br>(800) 446-1014<br>For Transportation Emergencies Chemtrec<br>(800) 424-9300 |  |

| <b>II Health Hazard Data</b>   | <b>III Hazardous Ingredients</b>  |  |               |                |                                       |         |                 |                                    |     |  |
|--|---|--|---------------|----------------|---------------------------------------|---------|-----------------|------------------------------------|-----|--|
| <p>DANGER: CORROSIVE. May cause severe irritation or damage to eyes and skin. Vapor or mist may irritate. Harmful if swallowed. Keep out of reach of children.</p> <p>Some clinical reports suggest a low potential for sensitization upon exaggerated exposure to sodium hypochlorite if skin damage (e.g., irritation) occurs during exposure. Under normal consumer use conditions the likelihood of any adverse health effects are low.</p> <p>Medical conditions that may be aggravated by exposure to high concentrations of vapor or mist: heart conditions or chronic respiratory problems such as asthma, emphysema, chronic bronchitis or obstructive lung disease.</p> <p><b>FIRST AID:</b></p> <p><u>Eye Contact:</u> Hold eye open and rinse with water for 15-20 minutes. Remove contact lenses, after first 5 minutes. Continue rinsing eye. Call a physician.</p> <p><u>Skin Contact:</u> Wash skin with water for 15-20 minutes. If irritation develops, call a physician.</p> <p><u>Ingestion:</u> Do not induce vomiting. Drink a glassful of water. If irritation develops, call a physician. Do not give anything by mouth to an unconscious person.</p> <p><u>Inhalation:</u> Remove to fresh air. If breathing is affected, call a physician.</p> | <table border="1"> <thead> <tr> <th>Ingredient</th> <th>Concentration</th> <th>Exposure Limit</th> </tr> </thead> <tbody> <tr> <td>Sodium hypochlorite<br/>CAS# 7681-52-9</td> <td>5 - 10%</td> <td>Not established</td> </tr> <tr> <td>Sodium hydroxide<br/>CAS# 1310-73-2</td> <td>&lt;1%</td> <td>2 mg/m<sup>1</sup><br/>2 mg/m<sup>2</sup></td> </tr> </tbody> </table> <p><sup>1</sup>ACGIH Threshold Limit Value (TLV) - Ceiling</p> <p><sup>2</sup>OHSA Permissible Exposure Limit (PEL) - Time Weighted Average (TWA)</p> <p>None of the ingredients in this product are on the IARC, NTP or OSHA carcinogen lists.</p> | Ingredient                                 | Concentration | Exposure Limit | Sodium hypochlorite<br>CAS# 7681-52-9 | 5 - 10% | Not established | Sodium hydroxide<br>CAS# 1310-73-2 | <1% | 2 mg/m <sup>1</sup><br>2 mg/m <sup>2</sup> |
| Ingredient   | Concentration   | Exposure Limit                             |               |                |                                       |         |                 |                                    |     |  |
| Sodium hypochlorite<br>CAS# 7681-52-9  | 5 - 10%   | Not established                            |               |                |                                       |         |                 |                                    |     |  |
| Sodium hydroxide<br>CAS# 1310-73-2   | <1%   | 2 mg/m <sup>1</sup><br>2 mg/m <sup>2</sup> |               |                |                                       |         |                 |                                    |     |  |

|  |  |
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| <b>IV Special Protection and Precautions</b>   | <b>V Transportation and Regulatory Data</b>  |
| <p>No special protection or precautions have been identified for using this product under directed consumer use conditions. The following recommendations are given for production facilities and for other conditions and situations where there is increased potential for accidental, large-scale or prolonged exposure.</p> <p><u>Hygienic Practices:</u> Avoid contact with eyes, skin and clothing. Wash hands after direct contact. Do not wear product-contaminated clothing for prolonged periods.</p> <p><u>Engineering Controls:</u> Use general ventilation to minimize exposure to vapor or mist.</p> <p><u>Personal Protective Equipment:</u> Wear safety goggles. Use rubber or nitrile gloves if in contact liquid, especially for prolonged periods.</p> <p>KEEP OUT OF REACH OF CHILDREN</p> | <p><u>DOT/IMDG/IATA</u> - Not restricted.</p> <p><u>EPA - SARA TITLE III/CERCLA:</u> Bottled product is not reportable under Sections 311/312 and contains no chemicals reportable under Section 313. This product does contain chemicals (sodium hydroxide &lt;0.2% and sodium hypochlorite &lt;7.35% ) that are regulated under Section 304/CERCLA.</p> <p><u>TSCA/DSL STATUS:</u> All components of this product are on the U.S. TSCA Inventory and Canadian DSL.</p> |

|   |  |
|---|--|
| <b>VI Spill Procedures/Waste Disposal</b>   | <b>VII Reactivity Data</b>   |
| <p><u>Spill Procedures:</u> Control spill. Containerize liquid and use absorbents on residual liquid; dispose appropriately. Wash area and let dry. For spills of multiple products, responders should evaluate the MSDS's of the products for incompatibility with sodium hypochlorite. Breathing protection should be worn in enclosed, and/or poorly ventilated areas until hazard assessment is complete.</p> <p><u>Waste Disposal:</u> Dispose of in accordance with all applicable federal, state, and local regulations.</p> | <p>Stable under normal use and storage conditions. Strong oxidizing agent. Reacts with other household chemicals such as toilet bowl cleaners, rust removers, vinegar, acids or ammonia containing products to produce hazardous gases, such as chlorine and other chlorinated species. Prolonged contact with metal may cause pitting or discoloration.</p> |

|   |  |
|---|--|
| <b>VIII Fire and Explosion Data</b>   | <b>IX Physical Data</b>  |
| <p><u>Flash Point:</u> None</p> <p><u>Special Firefighting Procedures:</u> None</p> <p><u>Unusual Fire/Explosion Hazards:</u> None. Not flammable or explosive. Product does not ignite when exposed to open flame.</p> | <p>Boiling point..... approx. 212°F/100°C</p> <p>Specific Gravity (H<sub>2</sub>O=1) ..... ~ 1.1 at 70°F</p> <p>Solubility in Water ..... complete</p> <p>pH ..... ~11.9</p> |



**COBRA® HERBICIDE**

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products is regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling. All necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA approved label.

**SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** COBRA® Herbicide  
**PRODUCT NUMBER(S):** 86640  
**EPA REGISTRATION NUMBER:** 59639-34  
**SYNONYM(S):** None

**MANUFACTURER**

**VALENT USA CORPORATION**

P.O. Box 8025

1333 N. California Blvd., Suite 600

Walnut Creek, CA 94596-8025

**EMERGENCY TELEPHONE NUMBERS HEALTH**

**TRANSPORTATION (24 hr):** (800) 892-0099

**TRANSPORTATION (24 hr):** CHEMTREC (800)

424-9300 or (202) 483-7616

**PRODUCT INFORMATION: AGRICULTURAL**

**PRODUCTS:** (800) 6VALENT

**PROFESSIONAL PRODUCTS:** (800) 89VALENT

**SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS**

| Ingredient Name (CAS #)<br>[Chemical Name]  | Percent | Exposure<br>Limit | Ref. |
|---|---------|-------------------|------|
| LACTOFEN* (77501-63-4)<br>[1-(carboethoxyethyl-5-(2-chloro-4-(trifluoromethyl)phenoxy)-2-nitrobenzoate] | 23.200  | None              | —    |
| INERT INGREDIENTS**   | 76.800  | None              | —    |

\* Active Ingredient

\*\* Inert Ingredients, which are maintained as trade secrets, are any substance other than an active ingredient contained in this product. Some of these may be hazardous, but their identity is withheld because they are considered trade secrets. The hazards associated with the inert ingredients are addressed in this document. Specific information on inert ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling 1-800-892-0099 at any time.

**SECTION 3: HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW****DANGER:**

- CORROSIVE
- CAUSES IRREVERSIBLE EYE DAMAGE
- CAUSES SKIN BURNS

- HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH THE SKIN
- AVOID BREATHING VAPOR OR SPRAY MIST
- DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING
- COMBUSTIBLE
- KEEP OUT OF REACH OF CHILDREN

**POTENTIAL HEALTH EFFECTS****Acute Toxicity (Primary Routes of Exposure).**

**Signs and Symptoms of Systemic Effects:** Signs of toxicity in test animals exposed to lethal or near-lethal oral doses included lethargy, ataxia, irregular breathing, lacrimation and loose stools. Inhalation of this product may cause nasal and respiratory irritation, central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness, and even death. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

**Eye:** This product has been shown to be corrosive to eyes. The degree of injury will depend on the amount and duration of contact and the speed and thoroughness of the first aid treatment. The expected adverse health effects resulting from an exposure may include irreversible eye damage and possibly blindness.

**Skin:** This product has been shown to be corrosive to skin. The degree of injury will depend on the amount and duration of contact and the speed and thoroughness of the first aid treatment. The expected adverse health effects resulting from exposure may include redness, swelling and pain for an extended period of time and irreversible tissue damage.

This product is not expected to cause allergic skin reactions.

This product has been shown to be slightly toxic when absorbed through the skin. The degree of injury will depend on the amount of material absorbed and the speed and thoroughness of the first aid treatment. The expected adverse systemic health effects resulting from an exposure are described above.

**Ingestion:** Ingestion of this product may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Because of the low viscosity of this product, it can directly enter the lungs if it is swallowed (this is called aspiration). This can occur during the act of swallowing or when vomiting. Once in the lungs, the substance is very difficult to remove and can cause severe injury to the lungs and death.

This product has been shown to be slightly toxic when ingested. The degree of injury will depend on the amount of material ingested and the speed and thoroughness of the first aid treatment. The expected adverse systemic health effects resulting from an exposure are described above.

**Inhalation:** Exposure to very high concentrations may result in respiratory irritation. Signs and symptoms may include nasal discharge, sore throat, coughing and difficulty in breathing.

This product has been shown to be minimally toxic when inhaled. The degree of injury will depend on the amount of material inhaled and the speed and thoroughness of the first aid treatment. The expected adverse systemic health effects are described above.  
**Chronic Toxicity (Including Cancer):** Studies with Lactofen Technical indicate that repeated high exposures produced changes primarily in the liver and blood cells. Other organs were affected but only at very high dose levels. No toxic effects were observed in a study with chimpanzees. Lactofen Technical did produce liver tumors in both rats and mice and EPA has classified Lactofen Technical as a Group B2 carcinogen (probable human carcinogen) on the basis of these findings.

**Teratology (Birth Defects) Information:** In studies with Lactofen Technical birth defects were produced in animals only at doses that were also toxic to the pregnant female.

**Reproduction Information:** Studies with Lactofen Technical showed reproductive effects in animals only at doses that produced other types of general toxicity.  
**Potentially Aggravated Condition:** Individuals with preexisting diseases of the liver and central nervous system may have increased susceptibility to the toxicity of excessive exposures.

For complete discussion of the toxicology data from which this evaluation was made, refer to Section 11.

**SECTION 4: FIRST AID MEASURES**

**EMERGENCY NUMBER:** (800) 892-0099

**EYES:** Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. See a doctor for further treatment as soon as possible.

**SKIN:** Remove contaminated clothing. Wash skin thoroughly with soap and water. See a doctor immediately. Discard contaminated non-waterproof shoes and boots. Wash contaminated clothing.

**INGESTION:** If swallowed: Do not induce vomiting. Call a physician or Poison Control Center. Drink promptly a large quantity of milk, egg whites, or gelatin solution. If these are not available, drink large quantities of water. Avoid alcohol. Get medical attention immediately.

**INHALATION:** If respiratory discomfort or irritation occurs, move the person to fresh air. See a doctor if discomfort or irritation continues.

**NOTES TO PHYSICIAN:** Material contains light hydrocarbon liquid and an aspiration hazard may exist.

**SECTION 5: FIRE FIGHTING MEASURES**

**FLASH POINT:** 122°F (50°C) **METHOD:** TCC

**AUTOIGNITION:** NDA

**EXTINGUISHING MEDIA:** CO<sub>2</sub>, dry chemical, foam, water fog.

**FLAMMABLE LIMITS** (% by volume in air):

Lower: NA

Upper: NA

**NFPA RATINGS:**

**Health 3; Flammability 2; Reactivity NDA; Special NDA;**

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

**OTHER CONSIDERATIONS:** None

**FIRE FIGHTING INSTRUCTIONS:** Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85°F.

Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

**HAZARDOUS COMBUSTION PRODUCTS:** Normal combustion forms carbon dioxide, water vapor and may produce oxides of nitrogen. Combustion may produce toxic compounds of chlorine and fluorine. Incomplete combustion can produce carbon monoxide.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**VALENT EMERGENCY PHONE NUMBER:** (800) 892-0099.

**CHEMTREC EMERGENCY PHONE NUMBER:** (800) 424-9300.

**OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION**

Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water.

**FOR SPILLS ON LAND:**

**CONTAINMENT:** Avoid runoff into storm sewers and ditches which lead to waterways. Contain spilled liquids with dry sorbents.

**CLEANUP:** Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in disposable container.

**FOR SPILLS IN WATER:**

**CONTAINMENT:** This material forms an emulsion in water. Stop or reduce contamination of any water. Isolate contaminated water.

**CLEANUP:** Remove contaminated water for removal or treatment.



**SECTION 7: HANDLING AND STORAGE****END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.**

DO NOT USE OR STORE near flame, sparks or hot surfaces. USE ONLY IN WELL VENTILATED AREA. Keep container closed. DO NOT weld, heat or drill container. Replace cap or bung. Emptied container still contains hazardous or explosive vapor or liquid. Keep pesticide in original container. Do not store or transport near food or feed. Do not put concentrate in food or drink containers. Do not dilute concentrate in food or drink containers. Do not contaminate food or feed.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.**

**EYE PROTECTION:** Appropriate eye protection must be worn when working with this material or serious harm can result. Wear chemical goggles or a face shield at all times.

**RESPIRATION/VENTILATION REQUIREMENTS:** This material may be a respiratory irritant and, unless ventilation is adequate, the use of approved respiratory protection is recommended.

Use this material only in well-ventilated areas.

**SKIN PROTECTION:** When handling this material, wear impervious protective clothing, which should include chemical resistant gloves, apron, overshoes and complete facial protection.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**APPEARANCE:** Amber liquid.

**ODOR:** Aromatic hydrocarbon odor.

**MELTING POINT:** NA

**BOILING POINT:** 135–145°C

**DENSITY/BULK DENSITY/SPECIFIC GRAVITY:** 0.991 @ 25/25°C

**SOLUBILITY:** Emulsifies in water.

**VAPOR PRESSURE:** 5–6 mm Hg @ 20°C (Xylene)

**DISSOCIATION CONSTANT:** NDA

**OCTANOL/WATER PARTITION COEFFICIENT:** NDA

**pH:** NDA

**VISCOSITY:** NDA

**MISCIBILITY:** NDA

**CORROSION CHARACTERISTICS:** NDA

**EVAPORATION RATE:** NDA

**SECTION 10: STABILITY AND REACTIVITY**

**CHEMICAL STABILITY:** Stable. Do not store at temperatures below 32°F.

**INCOMPATIBILITY:** May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

**HAZARDOUS DECOMPOSITION PRODUCTS:** NDA

**HAZARDOUS POLYMERIZATION:** Polymerization will not occur.

**IMPACT EXPLODABILITY:** NDA

**OXIDATION/REDUCTION PROPERTIES:** NDA

**SECTION 11: TOXICOLOGICAL INFORMATION**

**ACUTE:** (Product Specific Information):

**Eye Irritation:** This product is considered corrosive. It produced severe eye irritation with corneal opacities observed for 21-days after exposure. (Toxicity Category I)

**Skin Irritation:** This product produced severe skin irritation and signs of tissue damage in a test with rabbits. (Toxicity Category I)

**Dermal Toxicity:** The dermal LD<sub>50</sub> in rabbits is greater than 2 g/kg. (Toxicity Category III)

**Oral Toxicity:** The oral LD<sub>50</sub> in female rats is 2.4 and 2.6 g/kg for male rats. (Toxicity Category III)

**Inhalation Toxicity:** The 4-hour inhalation LC<sub>50</sub> in rats is 6.65 mg/l. (Toxicity Category IV)

**Skin Sensitization:** This product was not a skin sensitizer in a Buehler skin sensitization study in guinea pigs.

**SUBCHRONIC:** This product contains Lactofen Technical. In a 4-week oral toxicity study of Lactofen Technical in rats, a slight increase in spleen weight was the basis for a LOEL of 200 ppm. At doses of 1000 ppm or higher the following findings were reported: clinical signs of toxicity; decreased RBC, hemoglobin,

hematocrit and increased WBC; increased relative liver and spleen weights; and necrosis and pigmentation of hepatocytes. At 10,000 ppm severe toxic signs were observed by day 7 and all animals were dead or killed in extremis by day 11. Hypocellularity of the spleen, thymus and bone marrow was also observed in animals exposed to 10,000 ppm.

Histopathological changes in the liver and significant changes in clinical chemistry associated with the liver were observed in rats exposed to 1000 ppm of Lactofen Technical for 90 days. Decreased RBC, hemoglobin and hematocrit values were also observed at 1000 ppm. The NOEL in this study was 200 ppm.

In a 90-day study in mice, the LOEL for Lactofen Technical was 200 ppm based on: increased WBC, decreased hematocrit, hemoglobin and RBC; increased alkaline phosphatase, SGOT, SGPT, cholesterol and total serum protein levels; increased weights or enlargement of the spleen, liver, adrenals, heart and kidney; histopathological changes of the liver, kidney, thymus, spleen, ovaries and testes.

A subchronic toxicity study of Lactofen Technical in male chimpanzees was conducted. The chimpanzees were exposed to 5 or 75 mg/kg/day of Lactofen Technical for 92 or 93 days and examined through day 239 of the study. No effect on hematologic parameters or liver function was observed.

**CHRONIC/CARCINOGENICITY:** This product contains Lactofen Technical. In an 18-month oncogenicity study in mice at doses of 10, 50 and 250 ppm Lactofen Technical, a statistically significant increase in liver adenomas and carcinomas was observed at 250 ppm in both sexes. The lowest dose, 10 ppm, was the LOEL with increased liver weight and hepatocytomegaly.

In a 2-year chronic feeding/oncogenicity study of Lactofen Technical in rats at doses of 500, 1000 and 2000 ppm in the diet, a statistically significant increase of liver neoplastic nodules and foci of cellular alteration was observed in both sexes at 2000 ppm. The NOEL for systemic toxicity is 500 ppm based on kidney and liver pigmentation.

Based on the rat and mouse oncogenicity studies, EPA has classified Lactofen Technical as a Group B2 carcinogen (probably carcinogenic to humans).

Research studies indicate that Lactofen Technical and pure Lactofen are peroxisome proliferating agents and appear to induce liver tumors through this epigenetic mechanism.

In a 1-year feeding study of Lactofen Technical with dogs, the NOEL is 200 ppm and the LOEL is 1000/3000 ppm based on renal dysfunction and decreased hemoglobin, hematocrit, RBC and cholesterol.

**TERATOLOGY/DEVELOPMENTAL TOXICITY:** This product contains Lactofen Technical. Pregnant rats were administered oral doses of 15, 50 and 150 mg/kg/day Lactofen Technical on days 6-19 of gestation. Maternal toxicity (death, abortion and reduced body weight gain) was observed at 150 mg/kg/day. Developmental toxicity (reduced fetal weight, bent ribs and bent limb bones) was also observed at 150 mg/kg/day. The NOEL for this study was 50 mg/kg/day. Two developmental toxicity studies on Lactofen Technical were conducted in rabbits. In the first study, pregnant rabbits were administered oral doses of 5, 15 or 50 mg/kg/day of Lactofen Technical on days 6-18 of gestation. Maternal toxicity and developmental effects were observed at 15 and 50 mg/kg/day. In the second study, pregnant rabbits were exposed to 1, 4 or 20 mg/kg/day oral doses on days 6-18 of gestation. Maternal toxicity was observed at 20 mg/kg/day, while no developmental effects were observed at this dose.

**REPRODUCTION:** This product contains Lactofen Technical. Groups of male and female rats were administered 50, 500 or 2000 ppm of Lactofen Technical continuously for two generations. Adult systemic toxicity (mortality, reduced body weight, increased liver and spleen weight, decreased kidney weight, histopathological changes in the liver and testes) was observed at levels of 500 ppm and greater. Reproductive toxicity (lower pup survival rates, reduced pup weight, pup organ weight effects) was also observed at levels of 500 ppm and greater. The NOEL for both systemic and reproductive toxicity was 50 ppm.

**MUTAGENICITY:** This product contains Lactofen Technical. The following mutagenicity studies with Lactofen Technical were negative: unscheduled DNA

synthesis, chromosomal aberration, DNA repair assay and one Ames assay. A second Ames assay was positive. Lactofen Technical is not considered a genetic hazard.

**OTHER:** This product contains an inert ingredient that when inhaled can cause nasal and respiratory irritation, central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness, and even death. Ingestion of this chemical can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis which can be fatal.

**SECTION 12: ECOLOGICAL INFORMATION**

**AVIAN TOXICITY:** This product contains Lactofen Technical. The following results were obtained from studies with Lactofen Technical:

LD<sub>50</sub> quail: greater than 2510 mg/kg

LC<sub>50</sub> duck: greater than 5620 ppm

LC<sub>50</sub> quail: greater than 5620 ppm

**AQUATIC ORGANISM TOXICITY:** This product contains Lactofen Technical. The following effects were noted in studies with Lactofen Technical:

96-hour LC<sub>50</sub> bluegill sunfish: greater than 100 ppb<sup>1</sup>

96-hour LC<sub>50</sub> rainbow trout: greater than 100 ppb<sup>1</sup>

48-hour LC<sub>50</sub> *Daphnia magna* greater than 100 ppb<sup>1</sup>; 2.0 ppm

Fish early life stage toxicity (sheepshead minnow): MATC (Maximum Allowable Toxicant Concentration) greater than 0.78 ppm but less than 1.6 ppm

<sup>1</sup>Maximum solubility of Lactofen Technical.

**OTHER NON-TARGET ORGANISM TOXICITY:** This product contains Lactofen Technical. Lactofen Technical is practically nontoxic to bees with an acute topical LD<sub>50</sub> of greater than 160 ug/bee.

**SECTION 13: DISPOSAL CONSIDERATIONS**

**END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.**

**DISPOSAL METHODS:** Check governmental regulations and local authorities for approved disposal of this material. Dispose in accordance with applicable laws and regulations.

**SECTION 14: TRANSPORT INFORMATION**

**D.O.T. SHIPPING NAME:** Compounds, weed killing, liquid (Non-regulated)

**TECHNICAL SHIPPING NAME:** Lactofen 23.2% Solution

**D.O.T. HAZARD CLASS:** NA

**U.N./N.A. NUMBER:** NA

**SECTION 15: REGULATORY INFORMATION**

**REGULATIONS UNDER FIFRA:** All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

**OTHER U.S. FEDERAL REGULATIONS**

OSHA: NA

CERCLA RQ\*: 238 gal.

RCRA\*\*: NA

SARA Title III:

SARA 311 CATEGORIES:

1. Immediate (Acute) Health Effects; YES
2. Delayed (Chronic) Health Effect; YES
3. Fire Hazard; YES
4. Sudden Release of Pressure Hazard; NO
5. Reactivity Hazard; NDA

**STATE REGULATIONS:**

Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities.

\*RQ: Reportable Quantity

\*\*RCRA waste codes must be determined on a case by case basis (i.e., spill, processing waste, etc.). The waste code presented below is based on available product characteristics only.



**SECTION 16: OTHER INFORMATION****REASON FOR ISSUE:** Revised multiple Sections**PREPARED BY:** Eric D. Bruce**APPROVAL DATE:** 2/07/95**REVISION DATE:** 2/07/95**SUPERSEDES DATE:** 3/24/94**MSDS NUMBER:** 0027**EMERGENCY TELEPHONE #:** (800) 892-0099**Revision Number:** 3**NDA – No Data Available****NA – Not Applicable**

The information in this MSDS is based on data available to us as of the revision date given herein, and is believed to be correct. Contact Valent USA Corporation to confirm if you have the most current MSDS.

Judgments as to the suitability of information herein for the individual's own use or purposes are necessarily the individual's own responsibility. Although reasonable care has been taken in the preparation of such information, Valent extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to the individual's purposes or the consequences of its use.