1. Product /Company Identification

Product Name: DIACETYL

Manufacturer: Elan Chemical Co. Inc.
268 Doremus Ave.
Newark, NJ 07105
U.S.A.
Phone: (973)344-8014
Fax: (973)344-5880
Emergency: 800-424-9300 (Chemtrec)

2. Composition/Information on Ingredient

Synonyms: 2,3-Butanedione, Biacetyl
CAS Number: 431-03-8
FEMA: 2370
Molecular Formula: C₄H₆O₂
Molecular Weight: 86.09

3. Hazards Identification

Emergency Overview
Flammable (USA). Highly Flammable (EU). Harmful.

**Harmful by inhalation** and if swallowed. Irritating to eyes, respiratory system and skin.
Risk of serious damage to eyes. Stench.

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<td>Health</td>
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<td>Flammability</td>
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<td>Reactivity</td>
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4. First Aid Measures

Oral Exposure: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure: If inhaled, move to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Skin Exposure: In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure: In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.
5. Fire Fighting Measures

Flammable Hazards: YES

Flash Point: 7°C (44.6°F)

Extinguishing Material: Carbon Dioxide
Dry Chemical Powder
Foam

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Fire Fighting Hazards: Emits toxic fumes under fire conditions. Flammable liquid. Emits toxic fumes under fire conditions.

Exposure Hazards: Harmful Liquid. Irritant.

6. Accidental Release Measures

Procedure to be followed in case of leak or spill:
Evacuate Area. Shut off all sources of ignition. Use nonsparking tools.

Personal Protection: Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Clean up Methods: Cover area with an activated carbon adsorbent, take up and place in a closed container, and hold for waste disposal. Ventilate area and wash spill site after clean up is complete.

7. Handling and Storage Procedures

Handling: Do not breathe vapor. Do not get in eyes, skin and clothing. Avoid prolonged or repeated exposure.

Storage: Keep container tightly closed. Keep away from heat and open flame. Store in a cool, dry place.
8. Exposure Controls/ PPE

Respiratory: In addition to local exhaust ventilation, workers should use respiratory protection whenever they handle diacetyl. At a minimum, workers who handle diacetyl on a regular basis should wear a NIOSH-approved full-face air-purifying respirator with organic vapor cartridges and particulate filters. Employers must comply with the OSHA Respiratory Protection Standard including getting medical clearance for employees wearing respirators and providing fit testing annually.

Eyes: Chemical Safety goggles
Skin: Chemical resistant gloves.
Ventilation: Local exhaust ventilation should be used to reduce levels of diacetyl in air as much as possible. There is no known safe level of diacetyl in air.

General Hygiene Measures: Wash contaminated clothing before reuse. Wash thoroughly after handling.

9. Physical/Chemical Properties

Appearance: Yellow liquid
Odor: Pronounced butter odor.
Boiling Point: 88-89º C
Melting Point: -2ºC
Flash Point: 7ºC (44.6º F)
Vapor Density: 3 g/l
Specific Gravity: 0.985
Refractive Index: 1.394

10. Stability and Reactivity

Stability: Stable
Hazardous Decomposition Products: Carbon Monoxide, Carbon Dioxide, Nitrogen Oxides.

11. Toxicological Information

Exposure Effects:
- Skin Contact: Causes skin irritation.
- Skin Absorption: May be harmful if absorbed through skin.
- Eye Contact: Causes eye irritation.
- Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract. Prolonged exposure to this material may cause bronchiolitis obliterans (a severe narrowing or complete obstruction of the small airways) or lung disease.
- Ingestion: Harmful if swallowed.
Exposure to diacetyl can cause a serious lung disease (called bronchiolitis obliterans). The damage to the lungs can be permanent, severe, and can lead to death.

Individuals exposed to diacetyl who have persistent cough and/or shortness of breath should see a physician immediately and be evaluated for lung disease.

Employers should provide exposed employees with lung function tests and respiratory health questionnaires before beginning to work with diacetyl and at least every six months thereafter. A licensed physician should review the tests to look for decreases in lung function over time.

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

12. Ecological Information

No Data Available.

13. Disposal Considerations

Disposal: This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Dispose of in accordance with local, state, and federal regulations.

14. Transportation Information

Ground (DOT) & Air (IATA)
Proper shipping Name: Butanedione
UN# 2346
Class: 3
Packing Group: II
Hazard Label: Flammable

15. Regulatory Information

EU Classifications:
Symbol of Danger:F  Xn
Indication of Danger: Highly Flammable. Harmful
R: 11 20/22 38 41
Risk Statements: Highly Flammable. Harmful by inhalation and if swallowed. Irritating to skin. Risk of serious damage to eyes.
S: 16 26 39
Safety Statements: Keep away from sources of ignition – no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection.
US Classifications:
Risk Statements: Flammable. Harmful by inhalation and if swallowed. Irritating to eyes, respiratory system and skin. Risk of serious damage to eyes.
Safety Statements: Keep away from sources of ignition – no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection.

United States Regulatory Information
SARA Listed: No
TSCA Inventory Item: Yes

Canada:
DSL: Yes
NDSL: No

16. Additional Information
This material safety data sheet is intended to meet the specific requirements of 29 CFR 1910.1200 and should be used accordingly. While the information has been obtained from sources believed to be accurate and reliable, no warranty, expressed or implied, can be made with regard to its completeness, correctness or accuracy. Any users or handlers of this product who are not under the direct control of Elan Chemical Co., Inc. are responsible for evaluating this information in light of their particular situation and are responsible for all losses, damages or expenses that result while this material is under their control. It is also the responsibility of the users and handlers to observe any and all laws and regulations (Federal, State and Local) concerning the transportation, use, handling, storage and disposal of this product.