

MSDS – MATERIAL SAFETY DATA SHEET

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DIACETONE ALCOHOL

1. Product Identification

Synonyms: 4-Hydroxy-4-Methyl-2-Pentanone; pyranton; 4-hydroxy-2-keto-4-methylpentane; DAA

CAS No.: 123-42-2

Molecular Weight: 116.16

Chemical Formula: C₆H₁₂O₂

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Diacetone Alcohol	123-42-2	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM AND LIVER.

SAFETY DATA Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate (Life)

Flammability Rating: 2 - Moderate

Reactivity Rating: 1 - Slight

Contact Rating: 3 - Severe

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD;
PROPER GLOVES; CLASS B EXTINGUISHER

Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. Inhalation of high concentrations may affect the central nervous system and have a narcotic effect.

Ingestion:

Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. Symptoms may parallel those from inhalation.

Skin Contact:

Causes skin irritation. May be absorbed through skin. May cause dermatitis.

Eye Contact:

Vapors cause eye irritation. Splashes cause severe irritation, possible corneal burns and eye damage.

Chronic Exposure:

Chronic exposure may affect kidneys and liver. Prolonged or repeated skin exposure may cause dermatitis.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin conditions or impaired respiratory function may be more susceptible to the effects of this substance.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if symptoms occur.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

5. Fire Fighting Measures

Fire:

Flash point: 56C (133F) CC

Autoignition temperature: 603C (1117F)

Flammable limits in air % by volume:

lel: 1.8; uel: 6.9

Flammable Liquid and Vapor!

Note: Upon decomposition, diacetone alcohol may produce acetone or mesityl oxide which are more volatile and flammable than diacetone alcohol.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Sealed containers may rupture when heated. Contact with strong oxidizers may cause fire. Sensitive to static discharge.

Fire Extinguishing Media:

Use alcohol foam, dry chemical or carbon dioxide. (Water may be ineffective.) Water spray may be used to keep fire exposed containers cool.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Vapors can flow along surfaces to distant ignition source and flash back.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Storage containers made from brass, bronze or lead may contaminate product. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all

warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL): 50 ppm (TWA)

-ACGIH Threshold Limit Value (TLV): 50 ppm (TWA)

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece respirator with organic vapor cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Clear, colorless liquid.

Odor:

Faint pleasant odor.

Solubility:

Miscible in water.

Specific Gravity:

0.931 @ 25C/4C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

100

Boiling Point:

172C (342F)

Melting Point:

-44C (-47F)

Vapor Density (Air=1):

4.0

Vapor Pressure (mm Hg):

0.95 @ 20C (68F)

Evaporation Rate (BuAc=1):

0.14

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Carbon dioxide and carbon monoxide may form when heated to decomposition. May form acetone and mesityl oxide upon heating and by reaction with acids or bases.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Oxidizing agents, reducing agents, amines, alkanol, amines, aluminum, alkalis, pyridines, ammonia, isocyanates, inorganic acids and bases.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles. Note: Surfaces that are sufficiently hot may ignite diacetone alcohol, even in the absence of sparks and flame.

11. Toxicological Information

Oral rat LD50: 4.0 g/Kg; Skin rabbit LD50: 13,500 mg/kg; Irritation eye (std. Draize) rabbit: 20 mg, severe.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
-----	-----	-----	-----
Diacetone Alcohol (123-42-2)	No	No	None

12. Ecological Information

Environmental Fate:

When released into the soil, this material may biodegrade to a moderate extent. When

released into the soil, this material may leach into groundwater. When released into the soil, this material may evaporate to a moderate extent. When released into water, this material may biodegrade to a moderate extent. When released into water, this material is not expected to evaporate significantly. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material may be moderately degraded by photolysis. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition. When released into air, this material is expected to have a half-life between 10 and 30 days.

Environmental Toxicity:

This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: DIACETONE ALCOHOL

Hazard Class: 3

UN/NA: UN1148

Packing Group: III

Information reported for product/size: 2.5L

International (Water, I.M.O.)

Proper Shipping Name: DIACETONE ALCOHOL

Hazard Class: 3

UN/NA: UN1148

Packing Group: III

Information reported for product/size: 2.5L

International (Air, I.C.A.O.)

Proper Shipping Name: DIACETONE ALCOHOL

Hazard Class: 3

UN/NA: UN1148

Packing Group: III

Information reported for product/size: 2.5L

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
Diacetone Alcohol (123-42-2)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	--Canada--		
		DSL	NDSL	Phil.
Diacetone Alcohol (123-42-2)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Diacetone Alcohol (123-42-2)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8(d)
Diacetone Alcohol (123-42-2)	No	No	Yes

Chemical Weapons Convention: No TSCA 12(b): Yes CDTA: No
 SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
 Reactivity: No (Pure / Liquid)

Australian Hazchem Code: 2[S]E

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 2 Reactivity: 0

Label Hazard Warning:

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED,

INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM AND LIVER.

Label Precautions:

- Avoid breathing vapor.
- Avoid contact with eyes, skin and clothing.
- Keep container closed.
- Use only with adequate ventilation.
- Wash thoroughly after handling.
- Keep away from heat, sparks and flame.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, give large amounts of water to drink. Never give anything by mouth to an unconscious person. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information: No Changes.

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