


HEALTH	1
FLAMMABILITY	2
REACTIVITY	0

Section 1: IDENTIFICATION

Product Name: **Acetoin (Acetyl Methyl Carbinol), Natural (Powder)**
 Product Number: **0200800**
 Recommended Use: Flavorings
 Manufacturer: Aurochemicals, 7 Nicoll Street, Washingtonville, NY 10992
 Emergency Telephone No.: 1-800-535-5053 (International 1-352-323-3500 collect)

Section 2: HAZARD(s) IDENTIFICATION

OSHA Hazards	Flammable Solid, Irritant
GHS Classification	Flammable Solids (Category 2) Skin irritation (Category 2) Eye irritation (Category 2A)
GHS Label elements, including precautionary statements	
Pictogram or written description	
Signal Word:	Warning
Hazard Statement:	H228 Flammable Solid H315 Causes skin irritation H319 Causes serious eye irritation
Precautionary Statement	P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking P305 If in Eyes: Rinse cautiously with water for several minutes P351 Remove contact lenses, if present and easy to do. P338 Continue rinsing
HMIS Classification	Health Hazard 2 Flammability 2 Physical Hazards 2
Potential Health Effects	Inhalation May be harmful if inhaled. Causes respiratory tract irritation Skin May be harmful if absorbed through skin. Causes skin irritation Eyes Causes eye irritation Ingestion May be harmful if swallowed

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component:	Acetoin, dimer	Concentration:	90-100%
Chemical Name:	Acetoin		
Common Name:	Acetoin		
Synonyms:	3-Hydroxy-2-butanone; Acetylmethylcarbinol		
CAS #	513-86-0		

EC# 208-174-1
Molecular Weight 88.11 g/mol
Molecular Formula C₄H₈O₂

Section 4: FIRST AID MEASURES

General Advise: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Contact with eyes: Rinse thoroughly with plenty of water for at least 15 minutes and seek medical advice.

Contact with skin: Remove contaminated clothing. Rinse skin with cool water then wash with mild soap and warm water. Consult a physician

Inhalation: Provide fresh air, Consult a physician

Ingestion: **DO NOT induce vomiting.** Never give anything by mouth to unconscious person. Rinse mouth with water, seek medical advice, show this container or label to attending physician

Clothing contamination: Remove contaminated clothing and wash clothing before re-use

Section 5: FIREFIGHTING MEASURES

Conditions of Flammability Flammable Liquid. Keep away from heat /sparks/open flame/ hot surface. No smoking.

Suitable Extinguishing Media Water Spray, Carbon Dioxide, alcohol resistant foam, dry chemical

Special Firefighting Procedures: Do not stay in danger zone without self contained breathing apparatus
Prevent fire-fighting water from entering surface or ground water
Use water spray to cool unopened containers

Other Information Hazardous decomposition products formed under fire conditions – Carbon oxides.

Section 6: ACCIDENTAL RELEASE MEASURES

Person-related precautionary measures Evacuate personnel to safe areas. Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Avoid breathing vapors, mist, or gas. Ensure supply of fresh air in enclosed rooms, Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental-protected measures Do not allow to enter drains or sewage system.

Procedures for cleaning / absorption Contain spillage, and then pick up with electrically protected vacuum cleaner or by wet brushing and place in container suitable for disposal. Keep in suitable, closed containers for disposal.

Ventilate area After sweep up, wash area and ventilate area well

Section 7: HANDLING AND STORAGE

Precaution for safe handling Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition. No smoking. Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage: Keep container tightly closed, in dry and well ventilated place. Recommended Storage temperature: 2-8°C

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:	Contains no substances with occupational exposure limit values
Personal Protective Equipment:	<p>These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. They should not be construed as offering an approval for any specific use scenario.</p> <p>Impervious, protective clothing of flame retardant antistatic material should be selected specifically for the work place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.</p>
Respiratory Protection:	Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator or respirator with cartridges as a backup for engineering controls. If the respirator is the sole means of protection, use a full face supplied air respirator.
Eye Protection:	Safety glasses with side shields.
Hand Protection:	Handle with gloves, Use proper glove removal technique to avoid skin contact with this product. Wash and dry hands after handling this product.
Industrial Hygiene:	Handle in accordance with good industrial hygiene and safety practice. Wash contaminated clothing before reuse. Wash hands after working with product

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form:	Pale yellow to white crystalline powder
Odor:	Butter odor and taste
Boiling Point:	148°C
Flashpoint:	45°C
Melting Point:	90-93°C
Auto ignition temperature:	370°C
Lower Explosion Limit	No data available
Upper Explosion Limit	No data available
Vapor Pressure:	5 mbar at 20°C
Specific Gravity @ 25°C:	1.005-1.019
Solubility :	Miscible in alcohol, propylene glycol, water, insoluble in vegetable oils

Section 10: STABILITY AND REACTIVITY

Chemical Stability	Stable under normal temperatures and pressures
Conditions to be avoided	Incompatible materials, light, ignition sources, excess heat
Substances to be avoided	Strong oxidizing agents, Strong bases
Hazardous decomposition products:	Toxins formed under fire conditions – carbon dioxide, carbon monoxide
Hazardous Polymerization	Will not occur

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity

LD50 Oral Rat	>5,000 mg/kg
LD50 Dermal -Rabbit	>5 gm/kg
Skin corrosion / irritation	Rabbit – Skin irritation 500 mg/24 h–Draize Test
Serious eye damage/ eye irritation	No information available
Respiratory or skin sensitization	No information available
Germ cell mutagenicity	No information available

Carcinogenicity

	IARC	No component of this product present at levels greater than or equal to 0.1% is Identified as probable, possible or confirmed human carcinogen by IARC
	ACGIH	No component of this product present at levels greater than or equal to 0.1% is Identified as probable, possible or confirmed human carcinogen by ACGIH
	NTP	No component of this product present at levels greater than or equal to 0.1% is Identified as probable, possible or confirmed human carcinogen by NTP
	OSHA	No component of this product present at levels greater than or equal to 0.1% is Identified as probable, possible or confirmed human carcinogen by OSHA
Reproductive toxicity		No information available
Specific Target Organ toxicity-Single exposure (GHS)		No information available
Specific Target Organ toxicity-repeated exposure (GHS)		No information available
Potential Health Effects		Inhalation – May be harmful if inhaled. Causes respiratory tract irritation Ingestion – Harmful if swallowed Skin – Harmful if absorbed through skin. Causes skin irritation Eyes – Causes eye irritation
RTECS		EL8790000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.		

Section 12: ECOLOGICAL INFORMATION

Toxicity	No data available
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Section 13: DISPOSAL CONSIDERATIONS

Product:	According to local regulations
Packaging:	According to local regulations

Section 14: TRANSPORT INFORMATION

DOT (US) UN-no. / Name	UN1325 Class 4.1, PGIII
Proper shipping name:	Flammable solids, organic, n.o.s. (Acetyl Methyl Carbinol)
Reportable Quantity (RQ)	No
Marine Pollutant:	No
Poison Inhalation Hazard:	No

IMDG	UN1325 Class 4.1, PGIII	EMS-No: F-A, S-G
Proper shipping name:	Flammable solids, organic, n.o.s. (Acetyl Methyl Carbinol)	
Marine Pollutant:	No	

IATA	UN1325 Class 4.1, PGIII
Proper shipping name:	Flammable solids, organic, n.o.s. (Acetyl Methyl Carbinol)

Section 15: REGULATORY INFORMATION

OSHA Hazards	Flammable Solid, Irritant
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold (DeMinimis) reporting levels established by SARA Title III, Section 313
SARA 311/312 Hazards	Fire Hazard, Acute Health Hazard
Massachusetts Right to Know Components	No components are subject to the Massachusetts Right to Know Act
Pennsylvania Right to Know Components	Acetoin, dimer CAS# 513-86-0 Rev. Date: 3/1/07
New Jersey Right to Know Components	Acetoin, dimer CAS# 513-86-0 Rev. Date: 3/1/07
California Prop. 65 Components	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm
Labeling according to EC Directives	
Symbol	Not available
R-phrases	R-10 Flammable
S-phrases	S-16 Keep away from sources of ignition, No smoking
EC No.	204-618-3
Canada	CAS#: 513-86-0 is listed on the Canada's DSL list
US Federal TSCA	CAS# 513-86-0 is listed on the TSCA Inventory

Section 16: OTHER INFORMATION

Further information:

December 23, 2009, the USA Center of Disease Control –NIOSH in a letter updating USA Department of Labor-OSHA, stated it is planning to conduct research of three diacetyl substitutes; (1) starter mix, a distillate that contains diacetyl; (2) Acetoin, prepared from diacetyl and used for its butter-like odor; and (3) 2,3, pentanedione, a constituent of butter flavoring agents which NIOSH described as “structurally very similar to diacetyl”.

Exposure to diacetyl may cause nausea, headache and vomiting. For additional studies related to this product, review OSHA literature on Diacetyl and flavorings (www.OSHA.gov), the OSHA NEP for Microwave Popcorn Processing Plants, NIOSH publication 2004-110d, and other NIOSH literature regarding flavorings (www.cdc.gov/NIOSH).

Animals exposed to diacetyl and other related diacetyl substitutes experienced damage to the nose and upper airways, including severe damage to cells lining the respiratory tract. NIOSH has reported that employees exposed to butter flavorings containing diacetyl are at risk of developing occupational lung diseases and that in one instance, similar illnesses have been found among employees producing butter and vanilla flavorings containing diacetyl.

Aurochemicals provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining

Safety Data Sheet

its appropriateness for a particular purpose. Aurochemicals makes no representations or warranties, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Aurochemicals will not be responsible, nor held liable, for damages resulting from use of or reliance upon this information.

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