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1. Product and Company Identification

- 1.1 Product Identifier
Product Name: Crystal Clean Part 3
Product Code(s): **Diacetin**
Synonyms: **Glycerol diacetate; Reaction mass of glycerol 1,3-diacetate and glycerol acetate and triacetin**
REACH Registration Number: No data available
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
General use: **Material for use in industrial and laboratory applications**
Uses advised against: **None known**
- 1.3 Details of the supplier and of the safety data sheet
Distributor:
EFT Holdings, Inc.
1275 Rock Creek Circle
Lafayette, CO 80026 USA
303-309-6309
- 1.4 Emergency telephone number
1-800-424-9300 (24/7)

2. Hazards Identification

- 2.1 Classification of substance or mixture
Product definition: **Substance**
Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation (EC) No 1272/2008
Not a dangerous substance according to OSHA or to European Union Legislation
- 2.2 Label Elements
Not a dangerous substance according to GHS
- 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
None identified

3. Composition/ Information on Ingredients

- 3.1 Substance

Component	CAS-No.	% Wt.
Diacetin	25395-31-7	30 - 60
Triacetin	102-76-1	5 - 30
Monoacetin	26446-35-5	10 - 40
Glycerin	56-81-5	0 - 10

There are no additional ingredients present which, within the current knowledge of the supplier and in concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

- 3.2 Mixtures

Not applicable

4. First Aid Measures

- 4.1 Description of first aid measures

Inhalation: **Not a likely inhalation hazard. If product mist or vapor causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Loosen tight fitting clothing such as a collar, tie, belt or waistband. If symptoms persist, seek medical attention.**

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Eyes: **Immediately flush eyes with large amounts of water for 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do, after the first 2 minutes and continue rinsing. If irritation persists seek medical attention, preferably from an ophthalmologist.**

Skin: **Flush skin with water while removing contaminated clothing. Wash exposed skin areas with soap and water. Wash contaminated clothing and shoes thoroughly before reuse. If irritation persists, seek medical attention.**

Ingestion: **Rinse mouth with water if victim is conscious. Remove dentures, if any. Give 1 - 2 cup fulls of water or milk to drink if the victim is conscious, alert and able to swallow. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Obtain medical advice.**

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: **May cause mild eye irritation with redness and discomfort.**

Skin: **May cause mild, transient skin irritation in some individuals. This material is a low hazard for normal industrial handling.**

Inhalation: **Low inhalation hazard unless this material is heated or misted. If heated, inhalation may cause irritation of the upper respiratory tract.**

Ingestion: **May cause gastrointestinal upset with nausea, vomiting, abdominal pain and diarrhea, especially if a large quantity is ingested.**

Chronic: **None known**

4.3 Indication of immediate medical attention and special treatment needed

Advice to doctor and hospital personnel

Treat symptomatically and supportively.

5. Fire Fighting Measures

5.1 Extinguishable media

Suitable methods of extinction: Use dry chemical, carbon dioxide, alcohol-resistant foam, water spray or water fog.

Unsuitable methods of extinction: **Water jets may spread the fire.**

5.2 Special hazards arising from the substance or mixture

May be combustible at high temperature. Closed containers may explode due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

Explosive hazards: **Not considered to be explosion hazard.**

5.3 Advice for firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. Water contaminated by this material must be contained from being discharged to any waterway, sewer or drain to prevent environmental contamination.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Wear appropriate protective clothing designated in Section 8. Ventilate the area. Remove all sources of ignition. No smoking.

6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Cover drains and contain spill. Do not flush the spill down the drain. Cover with a large quantity of inert absorbent. Do not use combustible material such as sawdust. Collect material and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Dispose of in accordance with federal, state and local regulations.

6.4 Reference to other sections

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See Section 13 for additional waste treatment information.

7. Handling and Storage

7.1 Precautions for safe handling.

Wear all appropriate personal protective equipment specified in Section 8. Do not get in eyes or on skin or clothing. No smoking. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Wash contaminated clothing and shoes before reuse.

Advice on protection against fire and explosion

May be combustible at high temperatures.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Transfer only to approved containers having correct labeling. Keep container tightly closed. Protect container against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Containers of this material may be hazardous when empty since they retain product residues. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Do not take internally. Keep out of reach of children.

7.3 Specific end uses

Apart from the uses mentioned in section 1.2, no other specific uses are stipulated.

8. Exposure Controls/ Personal Protection

8.1 Control parameters

Occupational exposure limits

CAS Number	Ingredient	OSHA PEL	ACGIH TLV	NIOSH
56-81-5	Glycerin	5 mg/m ³ TWA, resp. fraction	10 mg/m ³ TWA	-----

8.2 Exposure controls

Engineering Measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1 for additional data.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eye wash station and safety shower. Change contaminated clothing. Preventative skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

Eye/face protection: Wear protective goggles or safety glasses with non-perforated side shields. Refer to 29 CFR 1910.133, ANSI Z87.4 or Standard EN 166.

Hand protection: Wear gloves recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of gloves must be greater than the intended use period.

Other protective equipment: Wear protective clothing. Wear protective boots if the situation requires.

Respiratory protection: None required with normal use. Always use an approved respirator when vapor/aerosols are generated. Where risk assessment shows air-purifying respirators are appropriate use a full-faced respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Environmental exposure controls: Do not empty into drains.

Personal Protection Equipment (PPE) must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean, fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturer to ensure adequate protection.

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9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	Clear, colorless, viscous liquid
Odor	Slight, characteristic
Odor Threshold	No data available
Molecular Weight	176.17 g/mol (Diacetin)
Chemical Formula	C ₇ H ₁₂ O ₅ (Diacetin)
pH	No data available
Freezing/Melting Point	-30°C (-22°F)
Boiling Point Range	260 - 280°C (500 - 536°F)
Evaporation Rate	<1 (n-BuO Ac=1)
Flammability (solid, gas)	Not applicable
Flash Point	110°C (230°F)
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Lower Explosive Limit (LEL)	No data available
Upper Explosive Limit (UEL)	No data available
Vapor Pressure	<1 mm Hg @ 20°C <i>estimated</i>
Vapor Density	6.08 (Air=1) <i>estimated</i>
Relative Density	1018
Viscosity	No data available
Solubility in Water	Niscible
Partition Coefficient; n-octanol/water	No data available
Oxidizing Properties	Not applicable
Explosive Properties	Not applicable
Volatiles by Weight @ 21°C	No data available

9.2 Other data

No data available

10. Stability and Reactivity

10.1 Reactivity

May form explosive mixtures with air upon intense heating.

10.2 Chemical stability

This product is stable under recommended storage conditions, handling and use. Material is hygroscopic (absorbs moisture from the air).

10.3 Possibility of hazardous reactions

May react violently with strong oxidizing agents. Hazardous polymerization does not occur.

10.4 Conditions to avoid

Extreme temperatures, contact with incompatible materials, moisture.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon.

11. Toxicological Information

11.0 Information on toxicological effects

Acute oral toxicity

LD₅₀, rat: 81,500 mg/kg

Acute inhalation toxicity

Expected to have low acute inhalation toxicity

Acute dermal toxicity

Expected to have low acute dermal toxicity

Skin irritation/corrosion

May cause mild skin irritation

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Sensitization

No data available

Genotoxicity

No data available

Mutagenicity

No data available

Specific organ toxicity = single exposure

No data available

Specific organ toxicity = repeated exposure

No data available

Aspiration hazard

No data available

11.2 Further information

No component of this product present at levels greater than or equal to the 0.1% threshold (de minimis) is identified as a probable, possible, potential or confirmed carcinogen by ACGIN, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates that it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

12. Ecological Information

12.1 Toxicity

Large discharges or spills of this material may be harmful to aquatic life and the environment.

12.2 Persistence and degradability

This material is readily biodegradable.

12.3 Bioaccumulation potential

This material is not expected to bioaccumulate.

12.4 Mobility in soil.

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

Additional ecological information

Do not allow material to run into surface waters, wastewater or soil

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. Disposal Considerations

13.1 Waste treatment methods

Methods of disposal: **The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.**

RCRA P-Series: **No listing**RCRA U-Series: **No listing**

14. Transport Information

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100-177, IMDG, IATA, EC, United Nations Transportation of Dangerous Goods (TDG) and WHMIS (Canada) TDG

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information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.
NOT REGULATED FOR TRANSPORT

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

U.S. Federal Regulations

OSHA Hazard Communication Standard: **This material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200**

OSHA Process Safety Management Standard: **This material is not regulated under OSHA PSM Standard 19 CFR 1910.119**

EPA Risk Management Planning Standard: **This material is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68**

EPA Federal Insecticide, Fungicide and Rodenticide Act.: **This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150**

Toxic Substance Control Act (TSCA) Inventory: **This material is listed on the TSCA Inventory. It is not subject to TSCA 12(b) Export Notification**

Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.12(b)) and 1310.4(f)(2) Chemical Code Number: **Not listings**

Drug Enforcement Administration (DEA) List 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number

Not listings

Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals: **Not listings**

Superfund Amendments and Reauthorization Act (SARA)

SARA 313 Information: **None of the chemicals in this product are subject to reporting requirements of Section 313 of the Emergency Planning and Community Right to Know Act of 1986.**

SARA Section 311/312 Hazard Categories: **None known**

SARA 302/304 Extremely Hazardous Substance: **None of the chemicals in this product are subject to reporting requirements of these sections of Title III of SARA.**

SARA 302/304 Emergency Planning & Notification: **None of the chemicals in this product are subject to reporting requirements of these sections of Title III of SARA.**

Comprehensive Response Compensation and Liability Act (CERCLA): **This product contains no CERCLA reportable substances.**

Clean Air Act (CAA)

This product does not contain any substances listed as Hazardous Air Pollutants (HAPs) designated in CAA Section 112(b).

This product does not contain any Class 1 Ozone depletors.

This product does not contain any Class 2 Ozone depletors.

Clean Water Act (CWA)

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

This product contains no chemicals listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains no chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm.

Other U.S. State Inventories

Glycerin (CAS #56-81d-5) is listed on the following State Hazardous Substance Inventories, Right to Know lists and/or Air Quality/Air Pollutants lists: MA, MN, NJ, PA, RI, WA.

Canada

WHMIS Hazard Symbol and Classification: No data available

Canadian National Pollutant Release Inventory (NPRI): **None of the components of this product are listed on the NPRI.**

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European Economic CommunityWGK, Germany (Water danger/protection): **2 (hazard to waters)**Global Chemical Inventory Lists

Country	Inventory Name	Inventory Listing*
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
United States	Toxic Substance Control Act (TSCA)	Yes
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*Yes - All components of this product are in compliance with the inventory requirements administered by the governing country.

No - One or more components of this product are not on the inventory or are exempt from listing.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

16. OTHER INFORMATION

US NFPA Codes	Health 0	Flammability 1	Instability 0	Special X
HMIS Codes	Health 0	Flammability 1	Physical Hazard 0	Personal Protection A

A= safety glasses

NFPA Hazard Rating Legend

0= Insignificant; 1= Slight; 2= Moderate; 3= High; 4= Extreme

HMIS Hazard Rating Legend

0= Minimal; 1= Slight; 2= Moderate; 3= Serious; 4= Severe; *= Chronic Health Hazard

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