



U.S. Department
of Transportation
**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

March 9, 2022

Jasmine Builes
Intermodal Tank Transport
10720 West Sam Houston Parkway North Suite 250
Houston, TX 77064

Reference No. 21-0115

Dear Ms. Builes:

This letter is in response to your December 7, 2021, email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the use of NA identification (ID) numbers outside of the United States. Specifically, you ask about the international shipment of a specific diacetone alcohol material, which has a flashpoint above 140 °F and below 200 °F, making it subject to regulation in the United States as a combustible liquid, yet unregulated when shipped internationally by vessel, according to the International Maritime Dangerous Goods (IMDG) Code. Moreover, you state that this material was transported internationally with placards and labels using the ID number “NA1993”.

You state that the shipper experienced frustration of shipment when transporting to Belgium because the material was described as a hazardous material. You seek confirmation that this specific diacetone alcohol material is regulated domestically within the United States and not regulated in accordance with the IMDG Code.

Your understanding is correct. ID numbers preceded by the letters “NA”—such as “NA1993”—are associated with proper shipping names not recognized for transportation outside of the United States, and therefore, would not be recognized by international competent authorities such as those in Belgium. This material is classified as a “combustible liquid” subject to regulation under the HMR.

The Dangerous Goods List of the IMDG Code, section 2.3.1.2, specifically excludes liquids with a flashpoint above 60 °C (140 °F) from the definition of a flammable liquid; therefore, this material is excepted from classification as a Class 3 hazardous material and is not subject to regulation under the IMDG Code.

I hope this information is helpful. Please contact us if we can be of further assistance.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Dirk Der Kinderen', written in a cursive style.

Dirk Der Kinderen
Chief, Standards Development Branch
Standards and Rulemaking Division

From: [Patrick, Eamonn \(PHMSA\)](#)
To: [Dodd, Alice \(PHMSA\)](#)
Subject: FW: Diacetone Alcohol (NA1993)- Conflict between 49CRF and IMDG
Date: Thursday, December 30, 2021 8:24:19 AM
Attachments: [image001.png](#)
[DAA-Diacetone Alcohol.pdf](#)

From: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>
Sent: Friday, December 10, 2021 3:16 PM
To: Dodd, Alice (PHMSA) <Alice.Dodd@dot.gov>
Cc: Hazmat Interps <hazmatinterps@dot.gov>
Subject: FW: Diacetone Alcohol (NA1993)- Conflict between 49CRF and IMDG

Hello Alice,

Please see the below interpretation request.

Should you have any questions, do not hesitate to reach out.

Regards,

-Breanna

From: Jasmine Builes <jbuiles@intermodaltank.com>
Sent: Tuesday, December 7, 2021 11:56 AM
To: INFOCNTR (PHMSA) <INFOCNTR.INFOCNTR@dot.gov>
Subject: Diacetone Alcohol (NA1993)- Conflict between 49CRF and IMDG

CAUTION: This email originated from outside of the Department of Transportation (DOT). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Dear Information Center,

Can you please issue an official letter of interpretation regarding the "Non-Regulated" status of Diacetone Alcohol when shipping internationally? The SDS is attached for your reference.

Background:

We are shipping Diacetone Alcohol in 20' isotanks (T11) from the United States to Belgium. Under 49CFR the product has been classified as a NA1993 but is not regulated under IMDG. To comply with 49CFR, the Supplier is placarding and labeling the tank as NA1993. Unfortunately, this is causing the

Receiver to be fined by the Belgian Port Authorities since the cargo is NOT hazardous per IMDG. We are looking for a formal answer to resolve the conflict between 49CFR and IMDG.

On December 3, 2021 @ 11:23AM, I spoke to Zach (Transportation Regulatory Specialist) at the Pipeline & Hazardous Material Safe Administration regarding our issue. He was unable to provide an answer at that time and advised that I would receive a call back by Tuesday (12/7/21).

On December 7, 2021 @ 10:12AM, I followed up and spoke to Josh (Transportation Regulatory Specialist). Josh advised the cargo would not be regulated if shipped internationally since the product is classified as a "Combustible" and not an official class 3. In addition, the flash point is above 140F.

A formal letter would be greatly appreciated.

Best regards,
Jasmine Builes



10720 West Sam Houston Parkway North Suite 250
Houston, Texas 77064
Office: +1 (281) 779-4882
Cell: +1 (312) 307-4778

SECTION 1: Identification

1.1. Identification

Product form	: Substance
Trade name	: Diacetone Alcohol
CAS-No.	: 123-42-2
Product code	: HP-040747 FP
Formula	: C ₆ H ₁₂ O ₂
Synonyms	: Diacetone / 4-Hydroxy-4-methyl pentan-2-one / 4-Hydroxy-4-methyl-2-pentanone / 4-Hydroxy-4-methylpentanone-2 / Pentan-2-one, 4-hydroxy-4-methyl- / 2-Pentanone, 4-hydroxy-4-methyl- / 4-Hydroxy-4-methylpentan-2-one / DIACETONE ALCOHOL / 4-Hydroxy-4-methyl-pentane-2-on / 4-Hydroxy-4-methyl-2pentanone

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Solvent

1.3. Supplier

Monument Chemical
16717 Jacintoport Blvd.
Houston, TX 77015 - USA
T (281) 452-5951 - F (281) 457-1127
sds@monumentchemical.com - www.monumentchemical.com

1.4. Emergency telephone number

Emergency number : 24 HR CHEMTREC: 1-800-424-9300; 24 HR Emergency Assistance: 1-832-376-2026

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids Category 4	H227	Combustible liquid
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Specific target organ toxicity (single exposure) Category 3	H335	May cause respiratory irritation

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : H227 - Combustible liquid
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US) : P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 - Wash hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear eye protection, protective clothing, protective gloves.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a doctor, a POISON CENTER if you feel unwell
P337+P313 - If eye irritation persists: Get medical advice/attention.
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO₂), dry extinguishing powder, Water spray to extinguish.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.

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P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%
Diacetone alcohol (Main constituent)	(CAS-No.) 123-42-2	>= 99

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after inhalation : May cause respiratory irritation.
Symptoms/effects after eye contact : Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

- Fire hazard : Combustible liquid.
Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

Diacetone Alcohol

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6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool. Store locked up. Keep container tightly closed.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Diacetone alcohol (123-42-2)		
ACGIH	Local name	Diacetone alcohol
ACGIH	ACGIH TWA (ppm)	50 ppm
ACGIH	Remark (ACGIH)	URT & eye irr
OSHA	OSHA PEL (TWA) (mg/m ³)	240 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
IDLH	US IDLH (ppm)	1800 ppm (10% LEL)
NIOSH	NIOSH REL (TWA) (mg/m ³)	240 mg/m ³
NIOSH	NIOSH REL (TWA) (ppm)	50 ppm

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Colorless liquid. Turns yellow on aging.
- Color : Colorless, Yellow
- Odor : pleasant, Sweet
- Odor threshold : 0.3 ppm

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pH	: No data available
Melting point	: Not applicable
Freezing point	: -47 °C ; -52.6 °F
Boiling point	: 168 °C ; 334.4 °F
Flash point	: 61 - 65.6 °C ; 142 - 150°F closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: 0.97 mm Hg @20C
Relative vapor density at 20 °C	: 4
Relative density	: 0.93 (at 25 °C)
Specific gravity / density	: 0.94 g/cm ³ (at 20 °C)
Molecular mass	: 116.2 g/mol
Solubility	: Soluble in water.
Log Pow	: 1.03
Auto-ignition temperature	: 640 °C ; 1184 °F
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: 1.8 - 6.9 vol %
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Diacetone alcohol (123-42-2)	
LD50 oral rat	> 4 g/kg
LD50 dermal rat	> 1875 mg/kg body weight (Equivalent or similar to OECD 402, 24 h, Rat, Male/female, Experimental value)

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified

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Specific target organ toxicity – single exposure : May cause respiratory irritation.
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after inhalation : May cause respiratory irritation.
Symptoms/effects after eye contact : Eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Diacetone alcohol (123-42-2)	
LC50 fish 1	420 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
LC50 fish 2	420 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Diacetone alcohol (123-42-2)	
Log Pow	1.03

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : NA1993 Combustible liquid, n.o.s. (Diacetone Alcohol), 3, III
UN-No.(DOT) : NA1993
Proper Shipping Name (DOT) : Combustible liquid, n.o.s.
Diacetone Alcohol
Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT) : III - Minor Danger
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx) : 150

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DOT Quantity Limitations Passenger aircraft/rail : 60 L
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Emergency Response Guide (ERG) Number : 128

Other information : No supplementary information available.

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

Diacetone alcohol (123-42-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

Diacetone alcohol (123-42-2)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Diacetone alcohol (123-42-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Diacetone alcohol (123-42-2)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

Diacetone alcohol (123-42-2)

State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
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SECTION 16: Other information

Revision date : 03/23/2018

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Full text of H-phrases:

H227	Combustible liquid
H319	Causes serious eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

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SECTION 1: Identification

1.1. Identification

Product form	: Substance
Trade name	: Diacetone Alcohol
CAS-No.	: 123-42-2
Product code	: HP-040747 FP
Formula	: C ₆ H ₁₂ O ₂
Synonyms	: Diacetone / 4-Hydroxy-4-methyl pentan-2-one / 4-Hydroxy-4-methyl-2-pentanone / 4-Hydroxy-4-methylpentanone-2 / Pentan-2-one, 4-hydroxy-4-methyl- / 2-Pentanone, 4-hydroxy-4-methyl- / 4-Hydroxy-4-methylpentan-2-one / DIACETONE ALCOHOL / 4-Hydroxy-4-methyl-pentane-2-on / 4-Hydroxy-4-methyl-2pentanone

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Solvent

1.3. Supplier

Monument Chemical
16717 Jacintoport Blvd.
Houston, TX 77015 - USA
T (281) 452-5951 - F (281) 457-1127
sds@monumentchemical.com - www.monumentchemical.com

1.4. Emergency telephone number

Emergency number : 24 HR CHEMTREC: 1-800-424-9300; 24 HR Emergency Assistance: 1-832-376-2026

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids Category 4	H227	Combustible liquid
Serious eye damage/eye irritation Category 2A	H319	Causes serious eye irritation
Specific target organ toxicity (single exposure) Category 3	H335	May cause respiratory irritation

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US)	: Warning
Hazard statements (GHS-US)	: H227 - Combustible liquid H319 - Causes serious eye irritation H335 - May cause respiratory irritation
Precautionary statements (GHS-US)	: P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking. P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. P264 - Wash hands thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear eye protection, protective clothing, protective gloves. P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P312 - Call a doctor, a POISON CENTER if you feel unwell P337+P313 - If eye irritation persists: Get medical advice/attention. P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO ₂), dry extinguishing powder, Water spray to extinguish. P403+P233 - Store in a well-ventilated place. Keep container tightly closed.

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P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%
Diacetone alcohol (Main constituent)	(CAS-No.) 123-42-2	>= 99

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after inhalation : May cause respiratory irritation.
Symptoms/effects after eye contact : Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

- Fire hazard : Combustible liquid.
Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

Diacetone Alcohol

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6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool. Store locked up. Keep container tightly closed.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Diacetone alcohol (123-42-2)		
ACGIH	Local name	Diacetone alcohol
ACGIH	ACGIH TWA (ppm)	50 ppm
ACGIH	Remark (ACGIH)	URT & eye irr
OSHA	OSHA PEL (TWA) (mg/m ³)	240 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
IDLH	US IDLH (ppm)	1800 ppm (10% LEL)
NIOSH	NIOSH REL (TWA) (mg/m ³)	240 mg/m ³
NIOSH	NIOSH REL (TWA) (ppm)	50 ppm

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Appearance : Colorless liquid. Turns yellow on aging.
- Color : Colorless, Yellow
- Odor : pleasant, Sweet
- Odor threshold : 0.3 ppm

Diacetone Alcohol

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

pH	: No data available
Melting point	: Not applicable
Freezing point	: -47 °C ; -52.6 °F
Boiling point	: 168 °C ; 334.4 °F
Flash point	: 61 - 65.6 °C ; 142 - 150°F closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: 0.97 mm Hg @20C
Relative vapor density at 20 °C	: 4
Relative density	: 0.93 (at 25 °C)
Specific gravity / density	: 0.94 g/cm ³ (at 20 °C)
Molecular mass	: 116.2 g/mol
Solubility	: Soluble in water.
Log Pow	: 1.03
Auto-ignition temperature	: 640 °C ; 1184 °F
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: 1.8 - 6.9 vol %
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Diacetone alcohol (123-42-2)	
LD50 oral rat	> 4 g/kg
LD50 dermal rat	> 1875 mg/kg body weight (Equivalent or similar to OECD 402, 24 h, Rat, Male/female, Experimental value)

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified

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Specific target organ toxicity – single exposure : May cause respiratory irritation.
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after inhalation : May cause respiratory irritation.
Symptoms/effects after eye contact : Eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Diacetone alcohol (123-42-2)	
LC50 fish 1	420 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
LC50 fish 2	420 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Diacetone alcohol (123-42-2)	
Log Pow	1.03

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : NA1993 Combustible liquid, n.o.s. (Diacetone Alcohol), 3, III
UN-No.(DOT) : NA1993
Proper Shipping Name (DOT) : Combustible liquid, n.o.s.
Diacetone Alcohol
Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT) : III - Minor Danger
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 241
DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx) : 150

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DOT Quantity Limitations Passenger aircraft/rail : 60 L
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Emergency Response Guide (ERG) Number : 128

Other information : No supplementary information available.

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

Diacetone alcohol (123-42-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

Diacetone alcohol (123-42-2)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Diacetone alcohol (123-42-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Diacetone alcohol (123-42-2)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

Diacetone alcohol (123-42-2)

State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
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SECTION 16: Other information

Revision date : 03/23/2018

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Full text of H-phrases:

H227	Combustible liquid
H319	Causes serious eye irritation
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

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