

SAFETY DATA SHEET

Preparation Date: 06/16/2015

Revision Date: 06/16/2015

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: P1016
Product Name: 2,4-PENTANEDIONE, REAGENT

Other means of identification

Synonyms: Acetyl acetone
 2,4-Dioxopentane
 2-Propanone, acetyl-
 ACAC
 Acetoacetone
 Acetone, acetyl-
 Acetyl 2-propanone
 Acetylacetone
 Diacetylmethane
 Pentan-2,4-dione
 Pentanedione
 Pentanedione-2,4
 UN2310

CAS #: 123-54-6
RTECS # SA1925000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Gasoline additive. In lube additives. Forms organometallic complexes which are used as driers for varnishes and printer's inks . Fungicides. Insecticide. Chemical intermediate. Catalyst.

Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Gases)	Category 3
Acute toxicity - Inhalation (Vapors)	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 3

Label elements

Danger

Hazard statements

Toxic in contact with skin
 Toxic if inhaled
 Harmful if swallowed
 Causes serious eye irritation
 Causes skin irritation
 May cause drowsiness or dizziness
 Flammable liquid and vapor



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/ .? /equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

In case of fire: Use CO₂, dry chemical, or foam to extinguish.
IF IN EYES: 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.
If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Call a POISON CENTER or doctor/physician. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
2,4-Pentanedione 123-54-6	123-54-6	100

4. FIRST AID MEASURES**First aid measures****General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126).

Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Eye Contact:

Flush eyes with water for 15 minutes. Get medical attention.

Inhalation:

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

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms

Causes serious eye irritation. Causes skin irritation. May cause abdominal pain, nausea, vomiting, diarrhea. Drowsiness. Dizziness. Inhalation of high concentrations may cause anesthetic effects. May cause headache. Weakness. Tetany. May affect behavior/central nervous system (tremor, convulsions). Dyspnea (Difficulty breathing and shortness of breath).

Indication of any immediate medical attention and special treatment needed

Notes to Physician:

Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media:

Dry chemical. Carbon dioxide (CO2). Water spray. Foam.

Unsuitable Extinguishing Media:

Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous Combustion Products:

Carbon oxides

Specific hazards:

Flammable
May be ignited by heat, sparks or flames
Container explosion may occur under fire conditions or when heated
Vapors may travel to source of ignition and flash back
Most vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks)
Fire may produce irritating and/or toxic gases

Special Protective Actions for Firefighters

Specific Methods:

Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

Special Protective Equipment for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Pay attention to flashback. Remove all sources of ignition. All equipment used when handling the product must be grounded. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Absorb spill with inert material (e.g. vermiculite, dry sand or earth), then place in a suitable chemical waste container. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use only non-sparking tools. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. Keep away from incompatible materials. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. Do not smoke. Keep away from heat and sources of ignition. Use only in well-ventilated areas. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Sensitive to light. Store in light-resistant containers. Keep away from heat and sources of ignition. Store away from incompatible materials. Store in a segregated and approved area.

Incompatible Materials:

Oxidizing agents. Reducing agents. Strong bases. Metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
2,4-Pentanedione 123-54-6	None	None	25 ppm TWA	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
2,4-Pentanedione 123-54-6	None	None	25 ppm TWA	None

Australia and Mexico

Components	Australia	Mexico
2,4-Pentanedione 123-54-6	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Goggles.
- Skin and body protection:** Chemical resistant protective suit. Gloves. Boots.
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid.	Appearance: No information available	Color: Clear. Colorless to pale yellow.
Odor: Pleasant. ketone-like.	Taste No information available	Formula: C ₅ H ₈ O ₂
Molecular/Formula weight: 100.12	Flammability: Flammable	Flash point (°C): 34°C
Flashpoint (°C/°F): 34°C/ 93.2°F	Flash Point Tested according to: Closed cup	Autoignition Temperature (°C/°F): 340°C/ 644°F
Lower Explosion Limit (%): 2.4%	Upper Explosion Limit (%): 11.6%	pH: No information available
Melting point/range(°C/°F): -23°C/ -9.4°F	Boiling point/range(°C/°F): 140.5°C/ 284.9°F	Decomposition temperature(°C/°F): No information available
Bulk density: No information available	Density (g/cm³): No information available	Specific gravity: 0.976
Vapor pressure @ 20°C (kPa): 0.933	Evaporation rate: No information available	Vapor density: 3.45
VOC content (g/L): No information available	Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): 1.9
Viscosity: No information available	Miscibility: No information available	Solubility: Soluble in cold water Practically insoluble in Glycerol

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents, reducing agents, strong bases, and metal

Chemical stability

Stability: Sensitive to light. Exposure to light accelerates decomposition. Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Stable at normal conditions

Incompatible Materials: Oxidizing agents. Reducing agents. Strong bases. Metals.

Hazardous decomposition products: Carbon oxides.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product code: P1016

Product name: 2,4-PENTANEDIONE,
REAGENT

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Principal Routes of Exposure:
Skin. Eyes. Inhalation. Ingestion.

Acute Toxicity

Component Information

2,4-Pentanedione - 123-54-6

LD50/oral/rat = 55 mg/kg [RTECS]
760-1000 mg/kg (European Chemicals Bureau IUCLID dataset)

LD50/oral/mouse = 951 mg/kg

LD50/dermal/rat = No information available

LD50/dermal/rabbit = 1370 mg/kg

LC50/inhalation/rat = 1224 ppm Inhalation LC50 Rat 4 h

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 760mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = 951mg/kg

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = 1370mg/kg

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = 1224ppm (4-hr)
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Toxic in contact with skin. Causes skin irritation.

Eye Contact: Causes serious eye irritation.

Inhalation Toxic by inhalation. May cause irritation of respiratory tract. Symptoms may include coughing and wheezing. Inhalation of vapors may cause drowsiness and dizziness. It may affect behavior/central nervous system (ataxia). May cause abdominal pain. May cause headache, nausea, vomiting. May cause diarrhea. May cause dyspnea (difficulty breathing or shortness of breath). It may affect behavior/central nervous system (convulsions). May cause muscle weakness. It may affect behavior/central nervous system (tremors).

Ingestion Harmful if swallowed. Causes digestive (gastrointestinal) tract irritation. Ingestion of large amounts may cause nausea, vomiting and abdominal pain. May cause diarrhea. May cause weakness. May affect behavior/central nervous system (somnolence). May affect behavior/central nervous system (tetany). May affect behavior/central nervous system (general anesthetic). May affect behavior/central nervous system (tremors). Unsteady gait. May cause lacrimation.

Aspiration hazard No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Prolonged or repeated skin contact may cause allergic skin reaction. If allergy develops, very low future exposure can cause itching and skin rash

Sensitization: No information available

Mutagenic Effects: Mutagenic effects in mammalian somatic cells

Carcinogenic effects: Not considered carcinogenic

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
2,4-Pentanedione	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure central nervous system.
STOT - repeated exposure No information available
Target Organs: Nervous system. Central nervous system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

2,4-Pentanedione - 123-54-6

Freshwater Fish Species Data: 64.1-80.1 mg/L LC50 *Oncorhynchus mykiss* 96 h flow-through 1
50.3-71.8 mg/L LC50 *Lepomis macrochirus* 96 h flow-through 1
98.3-110 mg/L LC50 *Pimephales promelas* 96 h flow-through 1
Water Flea Data: 34.4 mg/L EC50 *Daphnia magna* 48 h

Persistence and degradability: No information available

Bioaccumulative potential: Potential for bioconcentration in aquatic organisms is low.

Mobility: It is expected to have high mobility in soil.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
2,4-Pentanedione	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN2310
Proper Shipping Name: Pentane-2,4-dione
Hazard Class: 3
Subsidiary Risk: 6.1
Packing Group: III
ERG No: 131
Marine Pollutant: No data available
DOT RQ (lbs): No information available

Symbol(s):

TDG (Canada)

UN-No: UN2310
Proper Shipping Name: Pentane-2,4-dione
Hazard Class: 3
Subsidiary Risk: (6.1)
Packing Group: III
Description: No information available

ADR

UN-No: UN2310
Proper Shipping Name: Pentane-2,4-dione
Hazard Class: 3
Packing Group: III
Subsidiary Risk: 6.1
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN2310
Proper Shipping Name: Pentane-2,4-dione
Hazard Class: 3
Subsidiary Risk: 6.1
Packing Group: III

14. TRANSPORT INFORMATION

Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-E
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN2310
Proper Shipping Name: Pentane-2,4-dione
Hazard Class: 3
Subsidiary Risk: 6.1
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN2310
Proper Shipping Name: Pentane-2,4-dione
Hazard Class: 3
Subsidiary Risk: 6.1
Packing Group: III
Description: No information available

IATA

UN-No: UN2310
Proper Shipping Name: Pentane-2,4-dione
Hazard Class: 3
Subsidiary Risk: 6.1
Packing Group: III
ERG Code: 3P
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
2,4-Pentanedione	Present S	Present KE-27993	Present	Present (2)-562	Present	Present	Present 204-634-0

U.S. Regulations

2,4-Pentanedione

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 1477
Pennsylvania RTK: Present

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

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
2,4-Pentanedione	Not Listed	Not Listed	Not Listed	Not Listed

Product code: P1016

Product name: 2,4-PENTANEDIONE,
REAGENT

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CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
2,4-Pentanedione	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
2,4-Pentanedione	Not Applicable	09/30/1991 12/19/1995

Canada**WHMIS hazard class:**

B2 Flammable liquid

Canada Controlled Products Regulation:

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

Components	WHMIS Ingredient Disclosure List -
2,4-Pentanedione	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
2,4-Pentanedione	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
2,4-Pentanedione	Not listed	Not listed

EU Classification**R-phrase(s)**

R10 - Flammable.

R22 - Harmful if swallowed.

S -phrase(s)

S 2 - Keep out of the reach of children.

S21 - When using do not smoke.

S23 - Do not breathe gas/fumes/vapor/spray.

S24/25 - Avoid contact with skin and eyes.

Components	Classification	Concentration Limits:	Safety Phrases
2,4-Pentanedione	R10 Xn; R22	25%<=C: Xn; R22	S2 S21 S23 S24/25

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xn - Harmful.



16. OTHER INFORMATION

Preparation Date: 06/16/2015
Revision Date: 06/16/2015
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet