SDS

Safety Data Sheet

1. IDENTIFICATION

Product Identifier: **Diphenylcarbazide, 0.5% w/v in Acetone**

Product Code(s): D1005

Synonyms: Mixture

Recommended Use: For manufacturing, industrial, and laboratory use only. Use as a laboratory reagent.

Uses Advised Against: Not for food, drug, or household use.

Supplier:
Rocky Mountain Reagents, Inc.
4621 Technology Drive, Golden, CO 80403
Phone: (303) 762-0800 Fax: (303) 762-1240

Emergency Phone Number: (800) 255-3924 (VelocityEHS)

2. HAZARDS IDENTIFICATION

Hazard Classifications:

Eye Damage/Irritation:	Category 2A
Specific Target Organ Toxicity (Single Exposure):	Category 3
Flammable Liquids:	Category 2

Signal Word: DANGER

Hazard Statements:
Causes serious eye irritation.
May cause drowsiness or dizziness.
Highly flammable liquid and vapor.

Pictograms:



Precautionary Statements:

Prevention:
Wash thoroughly after handling.
Wear protective gloves, protective clothing, eye protection, and face protection.
Avoid breathing fumes, mists, vapors, or spray.
Use only outdoors or in a well-ventilated area.
Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.

Keep container tightly closed.
Ground container and receiving equipment.
Use explosion-proof electrical, ventilating, lighting, and transportation equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.

Response: 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 attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
In case of fire, use water spray, dry powder, alcohol resistant foam, or carbon dioxide to extinguish.

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

Disposal: Dispose of contents and container in accordance with local, regional, national, and international regulations.

Hazards Not Otherwise Classified: May cause adverse reproductive effects.
May cause aspiration hazard if vomited.

Toxicity Statement: Not applicable.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Component	Common Name / Synonyms	CAS#	Chemical Formula	% by Weight
Acetone	2-Propanone	67-64-1	C_3H_6O	99.4
1,5-Diphenylcarbazide	1,5-Diphenylcarbohydrazide	140-22-7	$C_{13}H_{14}N_4O$	0.632

Trade Secret Statement: Not applicable.

4. FIRST AID MEASURES

First Aid Procedures:

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious, or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention if symptoms occur.

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, keep head low so that vomit does not enter lungs. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.

Skin Contact: Remove contaminated clothing and shoes. Wash skin with plenty of water for at least 15 minutes. Wash clothing before reuse. Call a physician if symptoms occur.

Eye Contact: Check for and remove contact lenses, if present and easy to do. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention if symptoms occur.

General Advice:	Poison information centers in each state can provide additional assistance for scheduled poisons. Ensure that medical personnel and those providing first aid are aware of the material(s) involved and take precautions to protect themselves.
Symptoms and Effects:	Inhalation may cause drowsiness or dizziness. Ingestion may cause visual disturbances, nausea, vomiting, abdominal pain, and unconsciousness. Skin contact may cause irritation and dermatitis. Eye contact may cause serious irritation.
Immediate Medical Care/ Special Treatment:	Get medical attention immediately if feeling unwell or concerned. Treat symptomatically. Symptoms may be delayed.

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Water spray, dry powder, alcohol resistant foam, carbon dioxide.
Unsuitable Extinguishing Media:	Do not use a solid (straight) water stream, as it may scatter and spread fire.
Hazardous Combustion Products:	Carbon oxides, nitrogen oxides.
Specific Hazards:	Highly flammable. Vapors may cause flash fire or ignite explosively. Burns vigorously if ignited easily by heat, sparks, or flames. Material may burn with an invisible flame. Sealed containers may explode when heated or involved in fire. Material is sensitive to static discharge. Vapors may travel considerable distance to source of ignition and flash back. Vapor from the solvent may accumulate in container headspace, resulting in flammability hazard.
Special Protective Equipment/ Precautions for Firefighters:	As in any fire, wear MSHA/NIOSH-approved (or equivalent), self-contained, positive-pressure or pressure-demand breathing apparatus and full protective gear. Use water spray to cool unopened containers. Move containers from fire area, if you can do so without risk. This material may evaporate and leave a flammable residue if spilled. In the event of fire and/or explosion, do not breathe fumes.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions and Protective Equipment:	Ventilate area of leak or spill. Isolate hazard area and keep unnecessary and unprotected personnel away from the area of the leak or spill. Keep upwind. Keep out of low areas. Wear appropriate personal protective equipment (see Section 8). Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharge. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. Avoid contact with eyes, skin, and clothing.
Emergency Procedures:	In case of chemical emergency, or if unsure how to address an accidental release, consult a professional (see Section 1).
Methods for Containment:	Eliminate all sources of ignition. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements, or confined areas. Dike the spilled material where possible. Product should not be released to the environment. Contain and recover liquid when possible.
Methods for Cleanup:	Absorb spill with an inert material (e.g. vermiculite, dry sand, earth, cloth, or fleece) and place in a non-combustible container for reclamation or disposal. Do not flush to sewer. Clean contaminated surface thoroughly. Never return spills in original containers for reuse. Clean up in accordance with all applicable regulations.

7. HANDLING AND STORAGE

Handling: Do not handle, store, or open near an open flame, sources of heat, or sources of ignition. Wear personal protective equipment (see Section 8). Use only in well-ventilated areas. Provide sufficient air exchange and/or exhaust in work areas. Avoid contact with skin, eyes, and clothing. Do not breathe vapors or spray mist. Do not ingest. When using, do not eat, drink, or smoke. Take precautionary measures against static discharge. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Limit exposure to light. Keep away from incompatible materials (see Section 10). Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling. Containers of this material may be hazardous when empty, as they retain product residues. Observe all warnings and precautions listed for this product.

Storage: Store in a cool, dry, ventilated area. Keep out of light. Store in a segregated and approved area away from heat, sources of ignition, and incompatible materials (see Section 10). Store in original container. Keep containers tightly closed and upright. Keep away from food, drink, and animal foodstuffs. Keep out of the reach of children. Ground container and transfer equipment. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of this product.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:

Acetone:	ACGIH:	TWA:	500 ppm
		STEL:	750 ppm
	OSHA:	TWA:	750 ppm
		PEL:	1000 ppm
	NIOSH:	REL:	250 ppm
1,5-Diphenylcarbazide:	No information found.		

Engineering Controls: Ensure adequate ventilation. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Measures:

Eye/Face Protection: Wear safety glasses with side shields or safety goggles. Maintain approved eye wash station and accessible rinse facilities in work area.

Skin Protection: Wear appropriate chemical resistant clothing (with long sleeves) and appropriate chemical resistant gloves.

Respiratory Protection: An air-purifying, NIOSH-approved respirator with appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive-pressure, air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are unknown, or in any other circumstances where air-purifying respirators may not provide adequate protection.

Specific Requirements for Personal Protective Equipment: Ensure that glove material is compatible with this product. This information is available from glove manufacturers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Unless otherwise indicated, all properties are given at 25 °C and standard pressure.

Appearance:	Brownish, transparent liquid.
Odor:	Pungent, ketone.
Odor Threshold:	No information found.
Formula Weight:	Mixture.
pH:	No information found.
Melting/Freezing Point:	-94.6 °C (estimate)
Boiling Point/Range:	56.2 °C (estimate)
Decomposition Temperature:	No information found.
Flash Point:	-20 °C closed cup (estimate)
Auto-ignition Temperature:	465 °C (estimate)
Flammability:	Explosive as vapor; flammable as liquid.
Flammability/Explosive Limits:	Lower: 2.6% by volume (estimate) Upper: 12.8% by volume (estimate)
Solubility:	Miscible with alcohol, acetone.
Vapor Pressure:	184 mmHg at 20 °C; 232 mmHg at 25 °C (estimate)
Vapor Density:	2.0 (Air = 1) (estimate)
Specific Gravity:	0.791 (Water = 1)
Evaporation Rate:	No information found.
Viscosity:	No information found.
Partition Coefficient (n-octanol/water):	No information found.

10. STABILITY AND REACTIVITY

Reactivity Data:	Highly flammable. See Section 9.
Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat, flames, sparks, sources of ignition, exposure to light, incompatible materials.
Incompatible Materials:	Oxidizing agents, alkali metals, strong acids, ammonia.
Hazardous Decomposition Products:	Carbon oxides.
Possibility of Hazardous Reactions:	May react vigorously, violently, or explosively if exposed to extreme thermal conditions or in contact with the incompatible materials listed above.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:	Inhalation, ingestion, skin contact, eye contact.

Acute Effects: May be harmful if swallowed, inhaled, or exposed to the skin or eyes. Causes irritation to the eyes, skin, respiratory tract, and gastrointestinal tract. May cause drowsiness or dizziness if inhaled.

Chronic Effects: Prolonged or repeated exposure may cause liver and kidney effects; may cause dermatitis and adverse reproductive effects.

Toxicological Data:

Acetone:
- LD_{50} Oral, Rat: 5800 mg/kg
- LD_{50} Dermal, Rabbit: 20,000 mg/kg
- LC_{50} Inhalation, Rat: 50.1 mg/L 8 h
- Causes mild skin irritation based on animal data.
- Causes moderate to severe eye irritation based on animal data.

1,5-Diphenylcarbazide: No information found.

Symptoms of Exposure: Irritation, unconsciousness, visual disturbances, drowsiness, dizziness, nausea, vomiting, abdominal pain, skin dryness, skin redness.

Carcinogenic Effects: No component of this product is considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicological Data:

Acetone:
- LC_{50}, Rainbow Trout (Oncorhynchus mykiss): 5540 mg/L 96 h
- LC_{50}, Fathead Minnow (Pimephales promelas): 9640 mg/L 96 h
- EC_{50}, Water Flea (Daphnia magna): 12,100 mg/L 48 h

1,5-Diphenylcarbazide:
- No information found.

Persistence and Degradability: No information found.

Environmental Effects: Not expected to be hazardous to the environment. However, the possibility of an environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. DISPOSAL INFORMATION

Disposal Instructions: All wastes must be handled in accordance with local, state, and federal regulations. Minimize exposure to product waste (see Section 8). Do not dispose unused waste down drains or into sewers.

Contaminated Packaging: Because emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near product container. Offer rinsed packaging material to local recycling facilities.

Waste Codes: Acetone: U002 (Toxic Non-Acute Hazardous Waste)

14. TRANSPORT INFORMATION

DOT:

UN Number: UN1090

Proper Shipping Name: Acetone

Hazard Class: 3

Packing Group: II

ERG Number: 127

Environmental Hazard Regulations: Not classified as a marine pollutant.

Other Transport Precautions: DOT Reportable Quantity: Acetone:5000 lb

15. REGULATORY INFORMATION

U.S. Federal Regulations:

OSHA: This product is considered a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Inventory: All components of this product are on the U.S. TSCA Inventory.

U.S. EPCRA (SARA Title III):

Section 302: No information found.

Sections 311/312:

Hazard Category	List (Yes/No)
Section 311 – Hazardous Chemical	Yes
Immediate Hazard	Yes
Delayed Hazard	No
Fire Hazard	Yes
Pressure Hazard	No
Reactivity Hazard	No

Section 313: No information found.

CERCLA Reportable Quantities: Acetone:5000 lb

International Inventories:

Country or Region	Inventory Name	On Inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
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

*A "Yes" indicates that the listed components of this product comply with the inventory requirements administered by the governing country or region.

16. OTHER INFORMATION

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