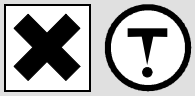
TCI AMERICA

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	**Combustible material; avoid heat and sources of ignition.** **Harmful compound, minimize exposure.** **Carcinogenic material.** **Light sensitive material.** **Refrigerate and vent pressure slowly before opening.**	

Section I. Chemical Product and Company Identification

Chemical Name **2,3-Benzofuran**

Catalog Number	B0060
Synonym	Cumarone
Chemical Formula	C_8H_6O
CAS Number	271-89-6

Supplier
TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

In case of Emergency Call
Chemtrec®
(800) 424-9300 (U.S.)
(703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
2,3-Benzofuran	271-89-6	Min. 99.0 (GC)	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.	Mouse LD_{50} (intraperitoneal) 500mg/kg

Section III. Hazards Identification

Acute Health Effects
Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Chronic Health Effects
CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY Not available.
There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

Section IV. First Aid Measures

Eye Contact
Check for and remove any contact lenses. IMMEDIATELY flush eyes with runing water for at least 15 minutes. keeping eyelids open. COLD water may be used. DO NOT use an eye oitment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper eyelids. Seek medical attention. Treat symptomatically and supportively.

Skin Contact
After contact with skin, wash immediately with plenty of water. Gently and thorough wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.

Inhalation
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform artificial respiration. Seek medical attention. Treat symptomatically and supportively.

Ingestion
INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt, or waistband. If the victim is not breathing, administer artificial respiration. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform artificial respiration. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

Section V. Fire and Explosion Data

Flammability	Combustible.	Auto-Ignition	Not available.
Flash Points	56°C (132.8°F).	Flammable Limits	Not available.

Combustion Products
These products are toxic carbon oxides (CO, CO_2).

Fire Hazards
No specific information is available regarding the flammability of this compound in the presence of various materials.

Explosion Hazards
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.
No additional information is available regarding the risks of explosion.

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Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO_2, alcohol foam or water spray. LARGE FIRE: Use alcohol foam, water spray or fog.

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Combustible material. Harmful material. Light-sensitive material. Refrigerate material. Carcinogenic material. Keep away from heat and sources of ignition. Mechanical exhaust required. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information	COMBUSTIBLE. HARMFUL. LIGHT-SENSITIVE. REFRIGERATE. CARCINOGEN. Do not breathe gas, fumes, vapor or spray. Always store away from incompatible compounds such as oxidizing agents.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. 
Exposure Limits	This chemical is classified as a possible carcinogen. There is no acceptable exposure limit for a carcinogen.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Colorless to yellow liquid.	Solubility	Insoluble in water, alkaline solvents. Miscible with benzene, petroleum ether, absolute alcohol and ether.
Specific Gravity	1.072		
Molecular Weight	118.13	Partition Coefficient	Not available.
Boiling Point	173 to 175°C (343.4 to 347°F)	Vapor Pressure	Not available.
Melting Point	Not available.	Vapor Density	Not available.
Refractive Index	1.56897 @ 16.93°C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Aromatic odor.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with oxidizing agents.

Section XI. Toxicological Information

RTECS Number	DF6423800
Routes of Exposure	Eye contact. Ingestion. Inhalation. Skin contact.
Toxicity Data	Mouse LD_{50} (intraperitoneal) 500mg/kg
Chronic Toxic Effects	**CARCINOGENIC EFFECTS** : Not available. **MUTAGENIC EFFECTS** : Not available. **TERATOGENIC EFFECTS** : Not available. **DEVELOPMENTAL TOXICITY**: Not available. There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.
Acute Toxic Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Continued on Next Page **Emergency phone number (800) 424-9300**

Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Benzofuran's production and use in the manufacture of coumarone-indene resins may result in its release to the environment through various waste streams. Benzofuran has been detected in exhaust gases from both gasoline and diesel engines, and in emissions from waste incineration. It also has been detected in drinking water, ground water, water effluent, atmospheric samples, in coffee aroma, and in human milk. Benzofuran is a component of coal tar. If released to soil, benzofuran should have low mobility. Volatilization of benzofuran may be important from moist and dry soil surfaces. Insufficient data are available to determine the rate or importance of biodegradation of benzofuran in soil and water. If released to water, benzofuran would adsorb to suspended solids and sediment. Benzofuran would volatilize from water surfaces with estimated half-lives for a model river and model lake of 5 hours and 5 days, respectively. An experimental BCF value of 360 suggests that benzofuran is expected to bioconcentrate inaquatic organisms. If released to the atmosphere, benzofuran will exist as a vapor. Vapor-phase benzofuran is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals with an estimated half-life of about 10.3 hours. Vapor-phase benzofuran is also degraded in the atmosphere by reaction with ozone with an estimated half-life of about 6.3 days. Although most of the benzofuran released to the atmosphere will exist in the vapor phase, it has been detected as an adsorbed material on airborne dust. Particulate-phase benzofuran may be physically removed from the air by wet and dry deposition. The general population can be exposed to benzofuran through inhalation of vapor and particulates containing the compound that are released in exhausts from combustion processes such as gasoline and diesel engines and waste incineration.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state, and local regulations when disposing of the substance.

Section XIV. Transport Information

DOT Classification	DOT CLASS 3: Flammable liquid.
PIN Number	UN1993
Proper Shipping Name	Flammable liquids, n.o.s.
Packing Group (PG)	III
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	WHMIS CLASS B-3: Combustible liquid with a flash point between 35°C (100°F) and 93.3°C (200°F).
EINECS Number (EEC)	205-982-6
EEC Risk Statements	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R45- May cause cancer.
Japanese Regulatory Data	Not available.

Section XVI. Other Information

Version 1.0
Validated on 9/3/1999.
Printed 1/20/2005.

Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.