







Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
 	Toxic compound, do not ingest or inhale. Avoid all contact with this material. CARCINOGEN. MINIMIZE EXPOSURE.	   

Section I. Chemical Product and Company Identification

Chemical Name	4,4'-Bis(dimethylamino)benzophenone		
Catalog Number	B0481	Supplier	TCl America 9211 N. Harbortgate St. Portland OR 1-800-423-8616
Synonym	Michler's Ketone		
Chemical Formula	$[(CH_3)_2NC_6H_4]_2CO$		
CAS Number	90-94-8	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
4,4'-Bis(dimethylamino)benzophenone	90-94-8	Min. 97.0 (T)	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.	Wild Bird LD ₅₀ (oral) 100 mg/kg

Section III. Hazards Identification

Acute Health Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	CARCINOGENIC EFFECTS : Carcinogenic by RTECS criteria. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic Effects. Rat TDLo Oral 15 gm.kg/78 weeks continuous. TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria. Liver - Tumors Rat TD Oral 27 gm/kg/78 weeks continuous TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria. Liver - Tumors Mouse TDLo Oral 82 gm/kg/78 weeks continuous TOXIC Effects - Tumorigenic - Carcinogenic by TRECS criteria Vascular - Tumors Liver - Tumors DEVELOPMENTAL TOXICITY: Not available.


Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention. Treat symptomatically and supportively.
Skin Contact	If the chemical gets spilled on a clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
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, perform mouth-to-mouth resuscitation. 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.

Section V. Fire and Explosion Data			
Flammability	Combustible.	Auto-Ignition	450 °C (842 °F)
Flash Points	Not available.	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂), nitrogen oxides (NO, NO 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.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO ₂ , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

Section VI. Accidental Release Measures	
Spill Cleanup Instructions	Toxic material. Carcinogenic material. Use a shovel to put the material into a convenient waste disposal container. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage	
Handling and Storage Information	TOXIC. CARCINOGEN. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Treat symptomatically and supportively. Avoid contact with skin and eyes. Always store away from incompatible compounds such as oxidizing agents.

Section VIII. Exposure Controls/Personal Protection	
Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. 
Exposure Limits	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.

Section IX. Physical and Chemical Properties			
Physical state @ 20°C	Solid. (Blue powder)	Solubility	Soluble in methanol. Very slightly soluble in diethyl ether. Insoluble in cold water, hot water.
Specific Gravity	Not available.	Partition Coefficient	Not available.
Molecular Weight	268.36	Vapor Pressure	Not available.
Boiling Point	>360 °C (698 °F) (dec.)	Vapor Density	Not available.
Melting Point	174 °C (345.2 °F)	Volatility	Not available.
Refractive Index	Not available.	Odor	Not available.
Critical Temperature	Not available.	Taste	Not available.
Viscosity	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 strong oxidizing agents, strong reducing agents.

Section XI. Toxicological Information

RTECS Number	DJ0250000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Wild Bird LD ₅₀ (oral) 100 mg/kg
Chronic Toxic Effects	<p>CARCINOGENIC EFFECTS : Carcinogenic by RTECS criteria. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Tumorigenic Effects. Rat TDLo Oral 15 gm.kg/78 weeks continuous. TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria. Liver - Tumors Rat TD Oral 27 gm/kg/78 weeks continuous TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria. Liver - Tumors Mouse TDLo Oral 82 gm/kg/78 weeks continuous TOXIC Effects - Tumorigenic - Carcinogenic by TRECS criteria Vascular - Tumors Liver - Tumors DEVELOPMENTAL TOXICITY: Not available.</p>
Acute Toxic Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.


Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	Not available.

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local 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.
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Section XIV. Transport Information

DOT Classification	DOT CLASS 6.1: Toxic material
PIN Number	UN2811
Proper Shipping Name	Toxic solid, organic, n.o.s.
Packing Group (PG)	III
DOT Pictograms	

Section XV. Other Regulatory Information and Pictograms

TSCA Chemical Inventory (EPA)	This product is ON The EPA Toxic Substances Control Act (TSCA) inventory.
WHMIS Classification (Canada)	Not available.
EINECS Number (EEC)	202-027-5
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
Japanese Regulatory Data	Not available.

Section XVI. Other Information**Version 1.0****Validated on 2/27/2006.****Printed 2/27/2006.****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.

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