

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
 	Environmental hazard. This material is toxic to aquatic organisms and may cause long term adverse effects to the aquatic environment. Irritating to skin, eyes, and the respiratory system.	   

Section I. Chemical Product and Company Identification

Chemical Name	2-Hydroxy-4-methoxybenzophenone		
Catalog Number	H0266	Supplier	TCI America 9211 N. Harborgate St. Portland OR 1-800-423-8616
Synonym	Methanone, (2-hydroxy-4-methoxyphenyl)phenyl- (CA INDEX NAME); Oxybenzone		
Chemical Formula	C ₁₄ H ₁₂ O ₃		
CAS Number	131-57-7	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-Hydroxy-4-methoxybenzophenone	131-57-7	Min. 99.0 (GC)	Not available.	Rat LD ₅₀ (oral) 7400 mg/kg Mouse LD ₅₀ (oral) 3200 mg/kg Mouse LD ₅₀ (intraperitoneal) 300 mg/kg

Section III. Hazards Identification

Acute Health Effects	Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. 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 : Reproductive effects. Rat TDLo Oral 45 gm/kg, female 90 days prior to mating TOXIC EFFECTS : Maternal Effects - Ovaries, fallopian tubes Rat TDLo Oral 333 gm/kg, male 13 weeks prior to mating TOXIC EFFECTS : Paternal Effects - Spermatogenesis Paternal Effects - Testes, epididymis, sperm duct Rat TDLo Oral 297 gm/kg, female 13 weeks prior to mating TOXIC EFFECTS : Maternal Effects - Menstrual cycle changes or disorders 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. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
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	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	188°C (370.4°F)	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂).		
Fire Hazards	Not available.		

Continued on Next Page

Emergency phone number (800) 424-9300

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.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. 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	Environmentally hazardous material. Irritating 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.
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Section VII. Handling and Storage

Handling and Storage Information	ENVIRONMENTAL HAZARD. IRRITANT. 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. Always store away from incompatible compounds such as oxidizing agents, alkalis (bases).
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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. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent.
	
Exposure Limits	Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Solid. (Light yellow ~ pale yellowish-green, crystal ~ powder.)	Solubility	Soluble in hot methanol. Very soluble in alcohol, toluene, and most organic solvents. Insoluble in water.
Specific Gravity	Not available.		
Molecular Weight	228.24	Partition Coefficient	LOG P _{ow} : 3.58
Boiling Point	150 to 160 °C (302 to 320 °F) @ 5 mmHg	Vapor Pressure	Not applicable.
Melting Point	63°C (145.4°F)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
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, alkalis (bases), acid chlorides, and acid anhydrides.

Section XI. Toxicological Information

RTECS Number	DJ1575000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD ₅₀ (oral) 7400 mg/kg Mouse LD ₅₀ (oral) 3200 mg/kg Mouse LD ₅₀ (intraperitoneal) 300 mg/kg
Chronic Toxic Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : Reproductive effects. Rat TDLo Oral 45 gm/kg, female 90 days prior to mating TOXIC EFFECTS : Maternal Effects - Ovaries, fallopian tubes Rat TDLo Oral 333 gm/kg, male 13 weeks prior to mating TOXIC EFFECTS : Paternal Effects - Spermatogenesis Paternal Effects - Testes, epididymis, sperm duct Rat TDLo Oral 297 gm/kg, female 13 weeks prior to mating TOXIC EFFECTS : Maternal Effects - Menstrual cycle changes or disorders Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

Acute Toxic Effects	Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
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Section XII. Ecological Information

Ecotoxicity	Not available.
Environmental Fate	2-Hydroxy-4-methoxybenzophenone's production and use as an ingredient in sunscreens and as an ultraviolet light absorber and stabilizer in plastics and paints may result in its release to the environment through various waste streams. If released to air, an estimated vapor pressure of 1.4X10 ⁻⁶ mm Hg at 25 deg C indicates 2-hydroxy-4-methoxybenzophenone will exist in both the vapor and particulate phases in the atmosphere. Vapor-phase 2-hydroxy-4-methoxybenzophenone will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 1.9 hours. Particulate-phase 2-hydroxy-4-methoxybenzophenone will be removed from the atmosphere by wet or dry deposition. 2-Hydroxy-4-methoxybenzophenone absorbs light at 288 and 326 nm and therefore may be susceptible to direct photolysis by sunlight. If released to soil, 2-hydroxy-4-methoxybenzophenone is expected to have slight mobility based upon an estimated Koc of 2,700. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 1.5X10 ⁻⁸ atm-cu m/mole. 2-Hydroxy-4-methoxybenzophenone is not expected to volatilize from dry soil surfaces based upon its vapor pressure. Biodegradation of 2-hydroxy-4-methoxybenzophenone in soil is expected to be slow based on 4% degradation after 28 days in a screening test using an activated sludge inoculum. If released into water, 2-hydroxy-4-methoxybenzophenone is expected to adsorb to suspended solids and sediment based upon the estimated Koc. Biodegradation in water is expected to be slow based on the screening test data. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant. A measured BCF ranging from 33-160 suggests the potential for bioconcentration in aquatic organisms is moderate to high. Hydrolysis is not expected to be an important environmental fate process since this compound lacks functional groups that hydrolyze under environmental conditions. Occupational exposure to 2-hydroxy-4-methoxybenzophenone may occur through dermal contact with this compound at workplaces where 2-hydroxy-4-methoxybenzophenone is produced or used. The general population will be exposed to 2-hydroxy-4-methoxybenzophenone via application of sunscreen containing this substance and dermal contact with other consumer products containing 2-hydroxy-4-methoxybenzophenone.

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 9: Miscellaneous
PIN Number	UN3077
Proper Shipping Name	Environmentally hazardous substance, solid, 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)	On DSL.
EINECS Number (EEC)	205-031-5
EEC Risk Statements	R36/37/38- Irritating to eyes, respiratory system and skin. R51- Toxic to aquatic organisms. R53- May cause long-term adverse effects in the aquatic environment.
Japanese Regulatory Data	ENCS No. 4-130

Section XVI. Other Information

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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.