

# Chem-Impex International Inc.

Tel: (630) 766-2112

E-mail: [sales@chemimpex.com](mailto:sales@chemimpex.com)

Shipping and Correspondence:

935 Dillon Drive

Wood Dale, IL 60191 USA

Fax: (630) 766-2218

Web site: [www.chemimpex.com](http://www.chemimpex.com)

Manufacturing site:

825 Dillon Drive

Wood Dale, IL 60191 USA

## MATERIAL SAFETY DATA SHEET

### SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #: 00128

NAME: Di-*tert*-butyl pyrocarbonate

SYNONYMS: Boc anhydride  
Di-*tert*-butyl dicarbonate  
Pyrocarbonic acid di-*tert*-butyl ester

24 HOUR EMERGENCY TELEPHONE: (800) 535-5053(USA)  
352-323-3500 (INTERNATIONAL)

TO REQUEST AN MSDS: (800) 869-9290

CUSTOMER SERVICE: (630) 766-2112

### SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

MF: C<sub>10</sub>H<sub>18</sub>O<sub>5</sub>

MW: 218.25

CAS-NO. 24424-99-5

PURITY: 99.5 % +(GC)

### SECTION 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

#### OSHA HAZARDS

FLAMMABLE LIQUID, HIGHLY TOXIC BY INHALATION, SKIN SENSITISER, IRRITANT

#### GHS CLASSIFICATION

FLAMMABLE LIQUIDS (CATEGORY 3)  
ACUTE TOXICITY, INHALATION (CATEGORY 1)  
SKIN IRRITATION (CATEGORY 2)  
EYE IRRITATION (CATEGORY 2A)  
SKIN SENSITIZATION (CATEGORY 1)  
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (CATEGORY 3)

#### GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS

SIGNAL WORD

DANGER

HAZARD STATEMENT(S)	
H226	FLAMMABLE LIQUID AND VAPOUR.
H315	CAUSES SKIN IRRITATION.
H317	MAY CAUSE AN ALLERGIC SKIN REACTION.
H319	CAUSES SERIOUS EYE IRRITATION.
H330	FATAL IF INHALED.
H335	MAY CAUSE RESPIRATORY IRRITATION.
PRECAUTIONARY STATEMENT(S)	
P260	DO NOT BREATHE DUST/ FUME/ GAS/ MIST/ VAPOURS/ SPRAY.
P280	WEAR PROTECTIVE GLOVES.
P284	WEAR RESPIRATORY PROTECTION.
P305 + P351 + P338	IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING.
P310	IMMEDIATELY CALL A POISON CENTER OR DOCTOR/ PHYSICIAN.
<b>HMIS CLASSIFICATION</b>	
HEALTH HAZARD:	3
FLAMMABILITY:	3
PHYSICAL HAZARDS:	0
<b>NFPA RATING</b>	
HEALTH HAZARD:	4
FIRE:	3
REACTIVITY HAZARD:	0
<b>POTENTIAL HEALTH EFFECTS</b>	
INHALATION	MAY BE FATAL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION.
SKIN	MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION.
EYES	CAUSES EYE IRRITATION.
INGESTION	MAY BE HARMFUL IF SWALLOWED.

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#### SECTION 4. FIRST-AID MEASURES

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GENERAL ADVICE	CONSULT A PHYSICIAN. SHOW THIS SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE. MOVE OUT OF DANGEROUS AREA.
IF INHALED	IF BREATHED IN, MOVE PERSON INTO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION CONSULT A PHYSICIAN.
IN CASE OF SKIN CONTACT	WASH OFF WITH SOAP AND PLENTY OF WATER. TAKE VICTIM IMMEDIATELY TO HOSPITAL. CONSULT A PHYSICIAN.
IN CASE OF EYE CONTACT	RINSE THOROUGHLY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES AND CONSULT A PHYSICIAN.
IF SWALLOWED	DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. CONSULT A PHYSICIAN.

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#### SECTION 5. FIRE AND EXPLOSION DATA

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<b>CONDITIONS OF</b>	FLAMMABLE IN THE PRESENCE OF A SOURCE OF IGNITION
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<b>FLAMMABILITY</b>	WHEN THE TEMPERATURE IS ABOVE THE FLASH POINT. KEEP AWAY FROM HEAT/SPARKS/OPEN FLAME/HOT SURFACE. NO SMOKING.
<b>SUITABLE EXTINGUISHING MEDIA</b>	USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE.
<b>SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS</b>	WEAR SELF CONTAINED BREATHING APPARATUS FOR FIRE FIGHTING IF NECESSARY
<b>HAZARDOUS COMBUSTION PRODUCTS</b>	HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS. - CARBON OXIDES
<b>FURTHER INFORMATION</b>	USE WATER SPRAY TO COOL UNOPENED CONTAINERS.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

<b>PERSONAL PRECAUTIONS</b>	WEAR RESPIRATORY PROTECTION. AVOID BREATHING VAPORS, MIST OR GAS. ENSURE ADEQUATE VENTILATION. REMOVE ALL SOURCES OF IGNITION. EVACUATE PERSONNEL TO SAFE AREAS. BEWARE OF VAPOURS ACCUMULATING TO FORM EXPLOSIVE CONCENTRATIONS. VAPOURS CAN ACCUMULATE IN LOW AREAS.
<b>ENVIRONMENTAL PRECAUTIONS</b>	PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS.
<b>METHODS FOR CLEANING UP</b>	CONTAIN SPILLAGE, AND THEN COLLECT WITH AN ELECTRICALLY PROTECTED VACUUM CLEANER OR BY WET-BRUSHING AND PLACE IN CONTAINER FOR DISPOSAL ACCORDING TO LOCAL REGULATIONS (SEE SECTION 13).

## SECTION 7. HANDLING AND STORAGE

<b>HANDLING</b>	AVOID CONTACT WITH SKIN AND EYES. AVOID INHALATION OF VAPOUR OR MIST. KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING. TAKE MEASURES TO PREVENT THE BUILD UP OF ELECTROSTATIC CHARGE.
<b>STORAGE</b>	KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE. CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT UPRIGHT TO PREVENT LEAKAGE. RECOMMENDED STORAGE TEMPERATURE: 2 - 8 °C HANDLE AND OPEN CONTAINER WITH CARE.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION	WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE USE A FULL-FACE PARTICLE RESPIRATOR TYPE N100 (US) OR TYPE P3 (EN 143) RESPIRATOR CARTRIDGES AS A BACKUP TO ENGINEERING CONTROLS. IF THE RESPIRATOR IS THE SOLE MEANS OF PROTECTION, USE A FULL-FACE SUPPLIED AIR RESPIRATOR. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).
HAND PROTECTION	HANDLE WITH GLOVES. GLOVES MUST BE INSPECTED PRIOR TO USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE'S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. DISPOSE OF CONTAMINATED GLOVES AFTER USE IN ACCORDANCE WITH APPLICABLE LAWS AND GOOD LABORATORY PRACTICES. WASH AND DRY HANDS.
EYE PROTECTION	FACE SHIELD AND SAFETY GLASSES USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU).
SKIN AND BODY PROTECTION	COMPLETE SUIT PROTECTING AGAINST CHEMICALS, FLAME RETARDANT ANTISTATIC PROTECTIVE CLOTHING, THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.
HYGIENE MEASURES	AVOID CONTACT WITH SKIN, EYES AND CLOTHING. WASH HANDS BEFORE BREAKS AND IMMEDIATELY AFTER HANDLING THE PRODUCT.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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APPEARANCE:	Clear colorless
PH	NO DATA AVAILABLE
BOILING POINT:	56-57°C/0.5mm
MELTING POINT:	21-23°C
DENSITY	0.95
VAPOUR PRESSURE	NO DATA AVAILABLE
WATER SOLUBILITY	NO DATA AVAILABLE
DECOMPOSITION TEMP.	NO DATA AVAILABLE
VAPOUR DENSITY	NO DATA AVAILABLE
REFRACTIVE INDEX	NO DATA AVAILABLE

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## SECTION 10. STABILITY AND REACTIVITY

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STABILITY	STABLE UNDER RECOMMENDED STORAGE CONDITIONS.
MATERIALS TO AVOID	OXIDIZING AGENTS, REDUCING AGENTS, BASES, AVOID CONTACT WITH:, ACIDS

HAZARDOUS  
DECOMPOSITION  
PRODUCTS

HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER  
FIRE CONDITIONS. - CARBON OXIDES

CONDITIONS TO AVOID

HEAT, FLAMES AND SPARKS.

POSSIBILITY OF  
HAZARDOUS REACTIONS

VAPOURS MAY FORM EXPLOSIVE MIXTURE WITH AIR.

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SECTION 11. TOXICOLOGICAL INFORMATION

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ACUTE TOXICITY

ORAL LD50  
LD50 ORAL - MAMMAL - > 5,000 MG/KG

INHALATION LC50  
LC50 INHALATION - RAT - 4 H - 100 MG/M3  
REMARKS: SENSE ORGANS AND SPECIAL SENSES (NOSE, EYE,  
EAR, AND TASTE):EYE:OTHER. LUNGS, THORAX, OR  
RESPIRATION:DYSPNEA. NUTRITIONAL AND GROSS  
METABOLIC:WEIGHT LOSS OR DECREASED WEIGHT GAIN.

DERMAL LD50  
LD50 DERMAL - MAMMAL - > 2,000 MG/KG

OTHER INFORMATION ON ACUTE TOXICITY  
NO DATA AVAILABLE

SKIN  
CORROSION/IRRITATION

NO DATA AVAILABLE

SERIOUS EYE DAMAGE/EYE  
IRRITATION

NO DATA AVAILABLE

RESPIRATORY OR SKIN  
SENSITIZATION

MAY CAUSE SENSITIZATION BY SKIN CONTACT.

GERM CELL  
MUTAGENICITY

NO DATA AVAILABLE

CARCINOGENICITY  
IARC:

NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS  
GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS  
PROBABLE, POSSIBLE OR CONFIRMED HUMAN CARCINOGEN  
BY IARC.

ACGIH:

NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS  
GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A  
CARCINOGEN OR POTENTIAL CARCINOGEN BY ACGIH.

NTP:

NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS  
GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN  
OR ANTICIPATED CARCINOGEN BY NTP.

OSHA:

NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS  
GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A  
CARCINOGEN OR POTENTIAL CARCINOGEN BY OSHA.

REPRODUCTIVE TOXICITY

NO DATA AVAILABLE

TERATOGENICITY

NO DATA AVAILABLE

SPECIFIC TARGET ORGAN  
TOXICITY - SINGLE  
EXPOSURE (GLOBALLY  
HARMONIZED SYSTEM)

NO DATA AVAILABLE

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (GLOBALLY HARMONIZED SYSTEM)	NO DATA AVAILABLE
ASPIRATION HAZARD	NO DATA AVAILABLE
SIGNS AND SYMPTOMS OF EXPOSURE	TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.
POTENTIAL HEALTH EFFECTS	
INHALATION	MAY BE FATAL IF INHALED. CAUSES RESPIRATORY TRACT IRRITATION.
SKIN	MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CAUSES SKIN IRRITATION.
EYES	CAUSES EYE IRRITATION.
INGESTION	MAY BE HARMFUL IF SWALLOWED.
ADDITIONAL INFORMATION	RTECS: HT0230000

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY	NO DATA AVAILABLE
PERSISTENCE AND DEGRADABILITY	NO DATA AVAILABLE
BIOACCUMULATIVE POTENTIAL	NO DATA AVAILABLE
MOBILITY IN SOIL	NO DATA AVAILABLE
PBT AND VPVB ASSESSMENT	NO DATA AVAILABLE
OTHER ADVERSE EFFECTS	NO DATA AVAILABLE

SECTION 13. DISPOSAL CONSIDERATIONS

PRODUCT  
 BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER BUT EXERT EXTRA CARE IN IGNITING AS THIS MATERIAL IS HIGHLY FLAMMABLE. OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO A LICENSED DISPOSAL COMPANY. CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL.

CONTAMINATED PACKAGING  
 DISPOSE OF AS UNUSED PRODUCT.

SECTION 14. TRANSPORT INFORMATION

DOT REGULATIONS:	
PROPER SHIPPING NAME:	TOXIC LIQUIDS, FLAMMABLE, ORGANIC, N.O.S. (Di- <i>tert</i> -butyl pyrocarbonate )
UN#:	UN2929
CLASS:	6.1 (3)
PACKING GROUP:	I
MARINE POLLUTANT:	NO
POISON INHALATION HAZARD:	NO

IATA REGULATIONS:  
PROPER SHIPPING NAME: TOXIC LIQUIDS, FLAMMABLE, ORGANIC, N.O.S. (Di-*tert*-butyl pyrocarbonate )  
UN#: UN2929  
CLASS: 6.1 (3)  
PACKING GROUP: I  
IATA PASSENGER: NOT PERMITTED FOR TRANSPORT

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SECTION 15. REGULATORY INFORMATION

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**OSHA HAZARDS**

FLAMMABLE LIQUID, HIGHLY TOXIC BY INHALATION, SKIN SENSITISER, IRRITANT

**SARA 302 COMPONENTS**

NO CHEMICALS IN THIS MATERIAL ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SARA TITLE III, SECTION 302

**SARA 313 COMPONENTS**

THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD (DE MINIMIS) REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313.

**SARA 311/312 HAZARDS**

FIRE HAZARD, ACUTE HEALTH HAZARD

**MASSACHUSETTS RIGHT TO KNOW COMPONENTS**

NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT TO KNOW ACT.

**PENNSYLVANIA RIGHT TO KNOW COMPONENTS**

	CAS-No.	REVISION DATE
Di- <i>tert</i> -butyl pyrocarbonate	24424-99-5	

**NEW JERSEY RIGHT TO KNOW COMPONENTS**

	CAS-No.	REVISION DATE
Di- <i>tert</i> -butyl pyrocarbonate	24424-99-5	

**CALIFORNIA PROP. 65 COMPONENTS**

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR ANY OTHER REPRODUCTIVE HARM.

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SECTION 16. OTHER INFORMATION

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MSDS LEGEND:

MW: MOLECULAR WEIGHT  
MF: MOLECULAR FORMULA  
VOC: VOLATILE ORGANIC COMPOUNDS  
ACGIH: AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS  
CAS: CHEMICAL ABSTRACTS SERIVE REGISTRY NUMBER  
OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION  
PEL: PERMISSIBLE EXPOSURE LIMIT (OSHA)  
TLV: THRESHOLD LIMIT VALUE (ACGIH)

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