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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Tetrakis(ethylmethylamido)titanium**

FORMULA: $C_{12}H_{32}N_4Ti$

CAS NO: 308103-54-0

SYNONYMS: Tetrakis(ethylmethylamino)titanium (IV)

Intended Use: For R&D use only.

MANUFACTURER:

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IN CASE OF TRANSPORTATION EMERGENCY CONTACT CHEM-TREC 1-800-424-9300
CHEM-TREC INTERNATIONAL: +1-703-741-5500

FOR TECHNICAL INFORMATION CONTACT: +1-262-293-0251

SECTION 2 HAZARDS IDENTIFICATION

CLASSSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS CLASSIFICATION:
Flammable liquids (category 2)
Substances, which in contact with water, emit flammable gases (category 1)
Skin corrosion (category 1B)
Serious eye damage (category 1)

Pictogram

SECTION 2 HAZARDS IDENTIFICATION (Cont.)

Signal Word **Danger**

Hazard Statements

H225	Highly flammable liquid and vapor
H260	In contact with water releases flammable gas which may ignite spontaneously
H314	Causes severe skin burns and eye damage

Precautionary Phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking
P223	Keep away from any possible contact with water, because of violent reaction and possible flash fire
P231 + P232	Handle and store contents under inert gas. Protect from moisture.
P233	Keep container tightly closed
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilating/lighting/equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P264	Wash skin thoroughly after handling
P280	Wear protective gloves/protective clothing/eye protection/face protection
P301 + P330 + P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN: (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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 POSION center or doctor/physician
P321	Specific treatment (see supplemental first aid instructions on this label)
P335 + P334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages
P363	Wash contaminated clothing before reuse
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal plant.

OTHER HAZARDS WHICH ARE NOT CLASSIFIED BY GHS:
Reacts violently with water.

NFPA 704 RATINGS (SCALE 0-4):
Health: 0 Flammability 3 Reactivity: 2 Special: ~~W~~

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name: Tetrakis(ethylmethylamido)titanium
Synonyms: Tetrakis(ethylmethylamino)titanium (IV)
Formula: $C_{12}H_{32}N_4Ti$
CAS #: 308103-54-0
Molecular weight: 280.28 g/mol

SECTION 4 FIRST AID MEASURES

GENERAL ADVICE: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
EYE EXPOSURE: Immediately flush eyes with plenty of water for at least 15 minutes. A victim may need help keeping their eyelids open. Seek immediate medical attention. Continue rinsing during transport to hospital.
SKIN EXPOSURE: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water for at least 15 minutes. Seek medical attention.
INHALATION: Move victim into fresh air. If not breathing, give artificial respiration. Seek medical attention.
INGESTION: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Seek medical attention.

SECTION 5 FIREFIGHTING MEASURES

EXTINGUISHING MEDIA:
For fighting fires, use dry chemical.

UNSUITABLE EXTINGUISHING MEDIA:
Water

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS:
Carbon oxides, nitrogen oxides (NOx), and titanium oxides

ADVICE FOR FIRE FIGHTERS
Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

For personal protection see section 8.

ENVIRONMENTAL PRECAUTIONS
Prevent further leakage or spillage if safe to do so. Do not allow material to enter drains.

METHODS AND MATERIALS
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place container for disposal according to regulations (see section 13). Do not flush with water.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING
Avoid inhalation of vapor or mist. Avoid contact with skin and eyes.
Use explosion-proof equipment. Keep away from sources of ignition – No smoking.
Take measures to prevent the buildup of electrostatic charge.

CONDITIONS FOR SAFE STORAGE
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. Never allow product to get in contact with water during storage. Store under inert gas.
Recommended storage temperature: 2 – 8^{o}C.

INCOMPATIBILITIES: Exposure to air, moisture.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS
Contains no substances with occupational exposure limit values.

APPROPRIATE ENGINEERING CONTROLS
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. Install local exhaust ventilation devices and management to ensure proper control.

PERSONAL PROTECTIVE EQUIPMENT
EYE/FACE PROTECTION: Wear chemical safety goggles, faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH or EN.
SKIN PROTECTION: Compatible chemical-resistant gloves. Inspect gloves before each use. Use proper glove removal technique 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.
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 worksite.
RESPIRATORY PROTECTION: Where risk-assessment shows air-purifying respirators are appropriate, use a full-face respirator with multi-purpose combination or type ABEK respirator cartridges as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: Colorless liquid
FORMULA MASS: 280.28 g/mol
ODOR: No data available
ODOR THRESHOLD: No data available
pH: No data available
MELTING POINT/ FREEZING POINT: No data available
BOILING POINT: 80 °C @ 0.1 mmHg
FLASH POINT: 2 °C (closed cup)
EVAPORATION RATE: No data available
UPPER/LOWER FLAMMABILITY/EXPLOSION LIMITS: No data available
VAPOR PRESSURE: No data available
VAPOR DENSITY: No data available
SPECIFIC GRAVITY: 0.923 g/cm^3 at 25ºC
SOLUBILITY IN WATER: Reacts with water
PARTITION COEFFICIENT: N-OCTANOL/WATER: No data available
AUTO-IGNITION TEMPERATURE: No data available
DECOMPOSITION: No data available
VISCOSITY: No data available

SECTION 10 STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under recommended storage conditions
POSSIBILITY OF HAZARDOUS REACTION: Vapors may form explosive mixture with air. Reacts violently with water.
CONDITIONS TO AVOID: Avoid heat, sparks, flame and other ignition sources. Extremes of temperature and direct sunlight. Exposure to moisture.
INCOMPATIBILE MATERIALS: Strong oxidizing agents, water.
HAZARDOUS DECOMPOSITION PRODUCTS: formed under fire conditions- Carbon oxides, nitrogen oxides, titanium oxide

SECTION 11 TOXICOLOGICAL DATA

ACUTE TOXICITY: No data available
SKIN CORROSIVE/IRRITANT: No data available
SEROUS EYE DAMAGE/IRRITATION: No data available
RESPIRATORY OR SKIN SENSITIZATION: No data available
GERM CELL MUTAGENICITY: No data available
CARCINOGENICITY: No component of this product present at levels greater or equal to 0.1% is identified as probable, possible, or confirmed carcinogen by IARC, ACGIH, NTP, OSHA.
REPRODUCTIVE TOXICITY: No data available
STOT-Single Exposure: No data available
STOT-Repeated Exposure: No data available
ASPIRATION HAZARD: No data available

POTENTIAL HEALTH EFFECTS
Inhalation: May be harmful if inhaled.
Skin: Harmful if absorbed through skin. Causes skin burns.
Eyes: Causes eye burns.
Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE:
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Spasm, inflammation and edema of the larynx and bronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea.

SECTION 12 ECOLOGICAL DATA

TOXICITY: No data available
PERSISTENCE AND DEGRADABILITY: No data available
BIOACCUMULATIVE POTENTIAL: No data available
MOBILITY IN SOIL: No data available
OTHER ADVERSE EFFECTS: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable federal, state, and local regulations.
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Contact a licensed professional waste disposal service to dispose of this material.
Dispose of contaminated packaging as unused product.

SECTION 14 TRANSPORTATION DATA

DOT, IATA, IMDG Regulated:
Organometallic substance, liquid, water-reactive, flammable (Tetrakis(ethylmethylamido)titanium(IV))
UN3399 Class 4.3 (3) PG: I

Marine pollutant: No
Poison inhalation hazard: No

SECTION 15 REGULATORY INFORMATION

OSHA Hazards:
Combustible liquid, Water reactive, Harmful by ingestion, Harmful by skin absorption, Corrosive

SARA 302/313 Components:
No chemicals in this material are subject to reporting requirements of SAR Title III, Section 302 or 313.

SARA 311/312 Hazards
Fire hazard, reactivity hazard

Massachusetts Right to Know Components

No components are subject to the Massachusetts Right to Know Act.

New Jersey/Pennsylvania Right to Know Components
Tetrakis(ethylmethylamido)titanium(IV) CAS#: 308103-54-0

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.

SECTION 16 OTHER INFORMATION

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, Nova-Kem makes no representation, warranty, or guarantee of any kind with respect to the information in this document or any use of the product based on the information.
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SDS DEPT