

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Tetrakis(ethylmethyamido) Vanadium**
FORMULA: $C_{12}H_{32}N_4V$
CAS NO: 791114-66-4
SYNONYMS: Tetrakis(ethylmethyamino) vanadium (IV); Vanadium (IV) ethylmethyamide; Ethanamine, N-methyl-, vanadium(4+)

Intended Use: For R&D use only.

MANUFACTURER:

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IN CASE OF TRANSPORTATION EMERGENCY CONTACT CHEM-TREC 1-800-424-9300
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SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS CLASSIFICATION:

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

Pictogram



SECTION 2 HAZARDS IDENTIFICATION (Cont.)

Signal Word

Danger

Hazard Statements

H224	Highly flammable liquid and vapor
H261	In contact with water releases flammable gas
H314	Causes severe skin burns and eye damage

Precautionary Phrases

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking
P231 + P232	Handle and store contents under inert gas. Protect from moisture
P233	Keep container tightly closed
P235	Keep cool
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
P260	Do not breathe dust/fume/gas/mist/vapors/spray
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.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P335 + P334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages
P361	Remove/Take off immediately all contaminated clothing
P363	Wash contaminated clothing before reuse
P370 + P378	In case of fire: Use Manufacturer/supplier or the competent authority for extinction
P403	Store in a dry place
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: 3

Flammability: 3

Reactivity: 2

Special: W

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name: Tetrakis(ethylmethylamido) vanadium

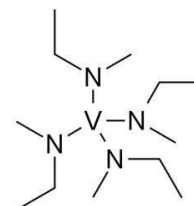
Synonyms: Tetrakis(ethylmethylamino) vanadium (IV);

Vanadium (IV) ethylmethylamide; Ethanamine, N-methyl-, vanadium(4+

Formula: $C_{12}H_{32}N_4V$

CAS #: 791114-66-4

Molecular weight: 283.36 g/mol



Tetrakis(ethylmethylamido) Vanadium

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 CO₂, dry chemical, or water spray. For larger fires use water spray or alcohol resistant foam.

HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS:

Carbon oxides, nitrogen oxides (NO_x), and vanadium 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. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.

For personal protection see section 8.

ENVIRONMENTAL PRECAUTIONS

No special measures required.

METHODS AND MATERIALS

Use neutralizing agent and place in container for disposal according to regulations (see section 13).

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

Thorough dedusting. Avoid contact with skin and eyes. Keep respiratory protective device available.

Use explosion-proof equipment. Keep away from sources of ignition – No smoking. Ensure good exhaust/ventilation at the workplace.

CONDITIONS FOR SAFE STORAGE

Keep container tightly closed in a dry and well-ventilated place. Store under inert gas. Recommended storage temperature: -18°C.

INCOMPATIBILITIES: Exposure to air, moisture, water.

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. 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.

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: Dark Green Liquid

FORMULA MASS: 283.36 g/mol

ODOR: No data available

ODOR THRESHOLD: No data available

pH: No data available

MELTING POINT/ FREEZING POINT: No data available

BOILING POINT: 230 C (estimate)

FLASH POINT: No data available

EVAPORATION RATE: No data available

UPPER/LOWER FLAMMABILITY/EXPLOSION LIMITS: No data available

VAPOR PRESSURE: 1 torr @ 107 C

VAPOR DENSITY: No data available

SPECIFIC GRAVITY: No data available

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: Reacts violently with water.

CONDITIONS TO AVOID: No further relevant information available.

INCOMPATIBLE MATERIALS: No further relevant information available.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides, nitrogen oxides (NO_x), and vanadium oxides

SECTION 11 TOXICOLOGICAL DATA

ACUTE TOXICITY: No data available

SKIN CORROSIVE/IRRITANT: No data available

SERIOUS 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

SECTION 11 TOXICOLOGICAL DATA (Cont.)

STOT-Single Exposure: No data available

STOT-Repeated Exposure: No data available

ASPIRATION HAZARD: No data available

POTENTIAL HEALTH EFFECTS

Skin: Harmful if absorbed through skin. Causes skin burns.

Eyes: Causes eye burns.

Ingestion: Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

SIGNS AND SYMPTOMS OF EXPOSURE:

Material is extremely destructive to tissue of the mucous membranes, eyes, and skin.

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.

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) Vanadium)

UN3399 Class 4.3 Labels 4.3, 3 PG: II

Marine pollutant: No

Poison inhalation hazard: No



SECTION 15 REGULATORY INFORMATION

OSHA Hazards:

Flammable solid. In contact with water releases flammable gas. Causes severe skin burns and eye damage

SARA 302/313 Components:

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

Massachusetts/New Jersey/Pennsylvania Right to Know Components

No components are subject to these Right to Know Acts.

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, WONIK MATERIALS NORTH AMERICA LLC 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.

DATE PREPARED: 06/2018 Rev. 1

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