



SAFETY DATA SHEET

MATERION

1. Identification

Product identifier Thorium Nitrate

Other means of identification

SDS number 2CK

Materion Code 2CK

CAS number 13823-29-5

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Materion Advanced Chemicals Inc.

Address 407 N 13th Street
1316 W. St. Paul Avenue
Milwaukee, WI 53233
United States

Telephone 414.212.0257

E-mail advancedmaterials@materion.com

Contact person Noreen Atkinson

Emergency phone number Chemtrec 800.424.9300

2. Hazard(s) identification

Physical hazards Oxidizing solids Category 2

Health hazards Acute toxicity, oral Category 4

Skin corrosion/irritation Category 2

Serious eye damage/eye irritation Category 2A

Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

Specific target organ toxicity, repeated exposure Category 2

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 2

Hazardous to the aquatic environment, long-term hazard Category 2

OSHA defined hazards Not classified.

Label elements



Signal word Warning

Hazard statement Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Suspected of damaging fertility or the unborn child. May cause harm to breast-fed children. May cause damage to organs through prolonged or repeated exposure. May intensify fire; oxidizer. Harmful if swallowed.

Precautionary statement

Prevention

Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wear eye/face protection. Use only outdoors or in a well ventilated area. Wear protective gloves. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling. Avoid contact during pregnancy and while nursing. Avoid contact during pregnancy/while nursing. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Response

If skin irritation occurs, obtain medical attention. Take off contaminated clothing and wash it before reuse. If eye irritation persists: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN: Gently wash with plenty of soap and water. Get medical attention if irritation develops or persists. Get medical advice/attention if you feel unwell.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store away from incompatible materials.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

None.

3. Composition/information on ingredients

Substances

| Chemical name | Common name and synonyms | CAS number | % |
|-----------------|--------------------------|------------|-----|
| Thorium Nitrate | | 13823-29-5 | 100 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

Remove contaminated clothing. Wash off with soap and plenty of water. If skin irritation occurs: Get medical advice/attention.

Eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms/effects, acute and delayed

Irritation of eyes and mucous membranes. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Wear suitable protective equipment.

Fire fighting equipment/instructions

Use water spray to cool unopened containers.

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| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Wear appropriate personal protective equipment. Ensure adequate ventilation. For personal protection, see section 8 of the SDS. |
| Methods and materials for containment and cleaning up | Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. |
| Environmental precautions | Do not contaminate water. Avoid discharge into drains, water courses or onto the ground. |

7. Handling and storage

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|---|--|
| Precautions for safe handling | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with eyes. Avoid contact with skin. Avoid contact during pregnancy/while nursing. When using, do not eat, drink or smoke. Use personal protective equipment as required. Wash hands thoroughly after handling. Avoid release to the environment. |
| Conditions for safe storage, including any incompatibilities | Store locked up. Store in a cool, dry place out of direct sunlight. Keep container tightly closed. Store in original tightly closed container. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS). |

8. Exposure controls/personal protection

| | |
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| Occupational exposure limits | No exposure limits noted for ingredient(s). |
| Biological limit values | No biological exposure limits noted for the ingredient(s). |
| Appropriate engineering controls | Provide eyewash station. |
| Control parameters | Follow standard monitoring procedures. |
| Individual protection measures, such as personal protective equipment | |
| Eye/face protection | Wear eye/face protection. Wear safety glasses with side shields (or goggles). |
| Skin protection | |
| Hand protection | Wear appropriate chemical resistant gloves. |
| Other | Wear suitable protective clothing. Wear protective gloves. |
| Respiratory protection | In case of insufficient ventilation, wear suitable respiratory equipment. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | When using, do not eat, drink or smoke. Avoid contact with eyes. Avoid contact with skin. Wash hands before breaks and immediately after handling the product. |

9. Physical and chemical properties

| | |
|--|----------------|
| Appearance | |
| Physical state | Solid. |
| Form | Solid. |
| Color | Not available. |
| Odor | Not available. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |

Upper/lower flammability or explosive limits

| | |
|--------------------------------|----------------|
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |

Vapor pressure Not available.

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Other information

Explosive properties Not explosive.

Molecular formula $\text{Th}(\text{NO}_3)_4 \cdot x\text{H}_2\text{O}$

Molecular weight 480.06 g/mol

Oxidizing properties Not oxidizing.

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid Contact with incompatible materials.

Incompatible materials None known.

Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation May cause irritation to the respiratory system.

Skin contact Causes skin irritation.

Eye contact Causes serious eye irritation.

Ingestion Due to lack of data the classification is not possible.

Symptoms related to the physical, chemical and toxicological characteristics Irritant effects.

Information on toxicological effects

Acute toxicity May cause respiratory irritation. Not known.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Due to lack of data the classification is not possible.

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| Skin sensitization | Due to lack of data the classification is not possible. |
| Germ cell mutagenicity | Due to lack of data the classification is not possible. |
| Carcinogenicity | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |
| IARC Monographs. Overall Evaluation of Carcinogenicity | |
| Not listed. | |
| OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) | |
| Not regulated. | |
| US. National Toxicology Program (NTP) Report on Carcinogens | |
| Not listed. | |
| Reproductive toxicity | May cause harm to breastfed babies. Suspected of damaging fertility or the unborn child. |
| Specific target organ toxicity - single exposure | Respiratory tract irritation. |
| Specific target organ toxicity - repeated exposure | May cause damage to organs through prolonged or repeated exposure. |
| Aspiration hazard | Due to lack of data the classification is not possible. |
| Chronic effects | May cause damage to organs through prolonged or repeated exposure. |
| Further information | This product has no known adverse effect on human health. |

12. Ecological information

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|--------------------------------------|---|
| Ecotoxicity | Contains a substance which causes risk of hazardous effects to the environment. |
| Persistence and degradability | No data is available on the degradability of this product. |
| Bioaccumulative potential | No data available. |
| Mobility in soil | No data available. |
| Other adverse effects | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

13. Disposal considerations

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| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Waste from residues / unused products | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |

14. Transport information

| | |
|-------------------------------------|---|
| DOT | |
| UN number | UN2912 |
| UN proper shipping name | Radioactive material, low specific activity (LSA-I) non fissile or fissile-excepted |
| Transport hazard class(es) | |
| Class | 7 |
| Subsidiary risk | - |
| Label(s) | 7 |
| Packing group | Not available. |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Special provisions | A56, T5, TP4, W7 |

Packaging exceptions 421, 422, 428
Packaging non bulk 427
Packaging bulk 427

IATA

UN number UN2912
UN proper shipping name Radioactive material, low specific activity (LSA-I) non fissile or fissile-excepted
Transport hazard class(es)
Class 7
Subsidiary risk -
Label(s) 7
Packing group Not available.
Environmental hazards No.
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN2912
UN proper shipping name Radioactive material, low specific activity (LSA-I) non fissile or fissile-excepted
Transport hazard class(es)
Class 7
Subsidiary risk -
Label(s) 7
Packing group Not available.
Environmental hazards
Marine pollutant No.
EmS Not available.
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

DOT; IATA; IMDG



15. Regulatory information

US federal regulations

CERCLA/SARA Hazardous Substances - Not applicable.

All components are on the U.S. EPA TSCA Inventory List.

This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - Yes
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|----------------------|-------------------|-----------------|
| Thorium Nitrate | 13823-29-5 | 100 |

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

16. Other information, including date of preparation or last revision

Issue date 05-21-2015
Revision date 01-15-2018
Version # 05

Further information

Emergency telephone numbers
Austria - VergiftungsInformationsZentrale, +431.406.43.43
Belgium - Centre Antipoisons - +070.245.245
Bulgaria - Телефон за спешни случаи / факс, +359.2.9154.409
Cyprus - +357.22405611
Czech Republic - Toxikologické informační středisko, +420.224.919.293
Denmark - Akuthjælp ved forgiftning, +82.12.12.12
Estonia - Mürgistusteabekeskuse, 16662
Finland - Myrkytystietokeskus, +(0)9.471.977
France - numéro ORFILA, +33.(0)1.45.42.59.59
Germany - GIZ-Nord Poisons Centre, +49.(0)551.383.1876
Greece - +30.210.64.79.286
Hungary - Az Egészségügyi Toxikológiai Tájékoztató Szolgálat, +36 1 476 6464
Iceland - +354.591.2000
Ireland - National Poisons Information Centre - +353.01.8092566
Italy - Istituto Superiore di Sanità, 064990.2423
Latvia - Valsts Toksikoloģijas centra Saindēšanās un zāļu informācijas centrs, +371.67042473
Liechtenstein - +423.236.61.95
Lithuania - Neatidėliotina informacija apsinuodijus, +370 5 236 20 52
Luxembourg - +352 42 59 91 600
Malta - 2545 0000
Netherlands - NVIC, 030-2748888
Norway - Giftinformasjonen, 22.59.13.00
Poland - Biuro ds. Substancji Chemicznych, +48 42 2538 424
Portugal - 808.250.143
Romania - Biroul RSI si Informare Toxicologica, 021.318.36.06
Slovakia - NTIC, +421.2.5477.4166
Slovenia - Kemična urad Republike Slovenije + 386.14.00.60.51
Spain - Servicio de Información Toxicológica, + 34.91.562.04.20
Sweden - 112

References

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

Disclaimer

Additional information is given in the Material Safety Data Sheet. Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use.

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