

Safety Data Sheet

ZP-4D

SECTION 1: IDENTIFICATION

1.1. PRODUCT IDENTIFIER

Trade name: ZP-4D

1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Relevant identified uses of the substance or mixture: Non-destructive testing
Restricted to professional users.

Uses advised against : None known.

1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company and address: **Magnaflux**
155 Harlem Ave.
60025 Glenview, IL
USA
847-657-5300
www.magnaflux.com/Magnaflux

Distributor: Address:

E-mail: support@magnaflux.com

SDS date: 9/20/2024

SDS Version: 5.0

1.4. EMERGENCY TELEPHONE NUMBER

Contact the poison control at 1-800-222-1222 (24/7) or use the webPOISONCONTROL® (triage.webpoisoncontrol.org) to get specific guidance for your case

See also section 4 "First aid measures".

Emergency number: CHEMTREC 800-424-9300

SECTION 2: HAZARD(S) IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Not classified according to HCS (29 CFR 1910.1200)

2.2. LABEL ELEMENTS

Hazard pictogram(s): Not applicable.

Signal word: Not applicable.

Hazard statement(s):

Precautionary statement(s):

General: -

Prevention: -

Response: -
Storage: -
Disposal: -
Additional labelling: Not applicable.

2.3. OTHER HAZARDS

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. SUBSTANCES

Not applicable. This product is a mixture.

3.2. MIXTURES

Product/substance	Identifiers	% w/w	Classification	Note
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	CAS No.: 68909-20-6	3-5%		[19]

Where the concentration of an ingredient is expressed as a range the exact concentration has been withheld as a trade secret.

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

OTHER INFORMATION

[19] UVCB = Unknown or variable composition, complex reaction products or of biological materials

SECTION 4: FIRST-AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

General information: If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid). Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation: In case of discomfort: bring the person into fresh air.

Skin contact: Upon irritation: rinse with water. In the event of continued irritation, seek medical assistance.

Eye contact: Rinse gently with lukewarm water. Remove any contact lenses if this is easy to do. Continue rinsing. In case of persistent eye irritation or discomfort: Seek medical help.

Ingestion: Rinse and flush mouth thoroughly and consume large quantities of water. In case of continued discomfort: seek medical assistance and

bring this safety data sheet.

Burns:

Not applicable.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

High amounts of dust can cause coughing and general irritation of the respiratory airways.

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Treat symptomatically.

INFORMATION TO MEDICS

Bring this safety data sheet or the label from this product.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.

Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Nitrogen oxides (NO_x)

Carbon oxides (CO / CO₂)

Some metal oxides

5.3. ADVICE FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact the Poison Help Line on 1-800-222-1222 (24/7) in order to obtain further advice.

Fire fighters should wear appropriate personal protective equipment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Ensure adequate ventilation, especially in confined areas.

Contaminated areas may be slippery.

6.2. ENVIRONMENTAL PRECAUTIONS

Avoid discharge to lakes, streams, sewers, etc.

Keep unauthorized persons away from the spill

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Collect spills carefully. Moist the material with water in order to prevent the formation and propagation of dust.

Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. REFERENCE TO OTHER SECTIONS

See section 13 "Disposal considerations" on handling of waste.

See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Smoking, drinking and consumption of food is not allowed in the work area.

See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

No special conditions required.

Recommended storage material:	Always store in containers of the same material as the original container.
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Storage conditions:	No specific requirements
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Incompatible materials:	Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.
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7.3. SPECIFIC END USE(S)

This product should only be used for applications quoted in section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

Magnesium carbonate

Long term exposure limit (OSHA Table Z-1) (mg/m³): 15 (total dust) / 5 (Respirable fraction)

Long term exposure limit (NIOSH REL) (mg/m³): 10 (Total dust), 5 (Respirable fraction)

Aluminium oxide

Long term exposure limit (OSHA Table Z-1) (mg/m³): 15 Total dust / 5 Respirable fraction

Long term exposure limit (ACGIH TLV) (mg/m³): 1 (Respirable)

Long term exposure limit (NIOSH REL) (mg/m³): 10

Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica

Long term exposure limit (OSHA Table Z-1) (mg/m³): 6

Part 1910 - Occupational Safety and Health Standards (29 CFR 1910.1000 TABLE Z-1 - Limits for Air Contaminants)

8.2. EXPOSURE CONTROLS

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

General recommendations:	Smoking, drinking and consumption of food is not allowed in the work area.
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Exposure scenarios:	There are no exposure scenarios implemented for this product.
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Exposure limits:	Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.
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Appropriate technical measures:	Apply standard precautions during use of the product. Avoid inhalation of gas or dust. Airborne gas and dust concentrations must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient
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is recommended. Ensure emergency eyewash and showers are clearly marked.
Airborne gas and dust concentrations must be kept at a minimum. Provide efficient mechanical ventilation. If not possible use suitable respiratory equipment.

Hygiene measures:

Wash hands after use.

Measures to avoid environmental exposure:

No specific requirements.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT

Generally:

Use only protective equipment with a recognized certification mark, e.g. the UL mark.

Respiratory Equipment:

Type	Class	Colour	Standards	
In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.				

Skin protection:

No specific requirements.

Hand protection:

No specific requirements.

Eye protection:

Type	Standards	
Safety glasses	EN166	

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

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Physical state:

Powder

Color:

White

Odor:

None

Odor threshold (ppm):

No relevant or available data due to the nature of the product.

pH:

Neutral

Density (g/cm ³):	0.26 (68 °F)
Relative density:	0.26 (68 °F)
Kinematic viscosity:	Not applicable - product is a solid
Particle characteristics:	Size distribution: < 30 µm

PHASE CHANGES

Melting point/freezing point (°F):	No data available
Softening point/range (°F):	Does not apply to solids.
Boiling point (°F):	Not applicable - product is a solid
Vapor pressure:	No data available
Relative vapor density:	Not applicable - product is a solid
Decomposition temperature (°F):	No data available

DATA ON FIRE AND EXPLOSION HAZARDS

Flash point (°F):	Not applicable
Flammability (°F):	The material is not combustible.
Auto-ignition temperature (°F):	No data available
Explosion limits (% v/v):	Not applicable

SOLUBILITY

Solubility in water:	No data available
n-octanol/water coefficient (LogKow):	No data available
Solubility in fat (g/L):	No data available

9.2. OTHER INFORMATION

Evaporation rate (n-butylacetate = 100):	Not applicable - product is a solid
Other physical and chemical parameters:	No data available.
Oxidizing properties:	No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. REACTIVITY

No data available.

10.2. CHEMICAL STABILITY

The product is stable under the conditions, noted in section 7 "Handling and storage".

10.3. POSSIBILITY OF HAZARDOUS REACTIONS, INCLUDING THOSE ASSOCIATED WITH FORESEEABLE EMERGENCIES

None known.

10.4. CONDITIONS TO AVOID

None known.

10.5. INCOMPATIBLE MATERIALS

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

The product is not degraded when used as specified in section 1.

SECTION 11: TOXICOLOGICAL INFORMATION**11.1. INFORMATION ON TOXICOLOGICAL EFFECTS****ACUTE TOXICITY**

Product/substance	Aluminium oxide
Test method:	OECD 401
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	>5000 mg/kg

Product/substance	Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	>5000 mg/kg

SKIN CORROSION/IRRITATION

Based on available data, the classification criteria are not met.

SERIOUS EYE DAMAGE/IRRITATION

Based on available data, the classification criteria are not met.

RESPIRATORY SENSITISATION

Based on available data, the classification criteria are not met.

SKIN SENSITISATION

Based on available data, the classification criteria are not met.

GERM CELL MUTAGENICITY

Based on available data, the classification criteria are not met.

CARCINOGENICITY

Based on available data, the classification criteria are not met.

REPRODUCTIVE TOXICITY

Based on available data, the classification criteria are not met.

STOT-SINGLE EXPOSURE

Based on available data, the classification criteria are not met.

STOT-REPEATED EXPOSURE

Based on available data, the classification criteria are not met.

ASPIRATION HAZARD

Based on available data, the classification criteria are not met.

LONG TERM EFFECTS

None known.

OTHER INFORMATION

None known.

SECTION 12: ECOLOGICAL INFORMATION

12.1. TOXICITY

Product/substance Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica
Test method: OECD 203
Species: Fish, Brachydanio rerio
Duration: 96 hours
Test: LC50
Result: >10000 mg/L

12.2. PERSISTENCE AND DEGRADABILITY

Based on available data, the classification criteria are not met.

12.3. BIOACCUMULATIVE POTENTIAL

Based on available data, the classification criteria are not met.

12.4. MOBILITY IN SOIL

No data available.

12.5. RESULTS OF PBT AND VPVB ASSESSMENT

This mixture/product does not contain any substances known to fulfil the criteria for PBT and vPvB classification.

12.6. OTHER ADVERSE EFFECTS

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA HAZARDOUS WASTE ("P" AND "U" LIST) (40 CFR 261)

None of the components are listed

SPECIFIC LABELLING

CONTAMINATED PACKING

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: TRANSPORT INFORMATION

14.1 UN / ID		14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other informat ion:
DOT	-	-	Transport hazard class: Not regulated for transport	-	No	See below for additional information.
IMDG	-	-	Transport hazard class: Not regulated for transport	-	No	See below for additional information.

14.1 UN / ID		14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other informat ion:
						informati on.
IATA	-	-	Transport hazard class: Not regulated for transport	-	No	See below for additiona l informati on.

* Packing group

** Environmental hazards

ADDITIONAL INFORMATION

Not dangerous goods according to DOT, IATA and IMDG.

14.6. SPECIAL PRECAUTIONS FOR USER

Not applicable.

14.7. TRANSPORT IN BULK ACCORDING TO IMO INSTRUMENTS

No data available.

SECTION 15: REGULATORY INFORMATION

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

15.2. U.S. FEDERAL REGULATIONS

TSCA (the non-confidential
portion):

Magnesium carbonate is listed
Aluminium oxide is listed
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products
with silica is listed

Clean Air Act:

None of the components are listed

EPCRA Section 302:

None of the components are listed

EPCRA Section 304:

None of the components are listed

EPCRA section 313:

Aluminium oxide is listed

CERCLA:

None of the components are listed

Hazardous chemical
inventory reporting:

This product is not subject to Tier II reporting.

STATE REGULATIONS

California / Prop. 65:

See product label for Prop 65 Statement (if applicable)

Massachusetts / Right To
Know Act:

Magnesium carbonate is listed
Aluminium oxide is listed

New Jersey / Right To Know
Act:

Magnesium carbonate / Substance number: 4018
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Aluminium oxide / Substance number: 2891
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New York / Right To Know Act:	Aluminium oxide is listed Aluminium oxide is regulated with a Treshold Reporting Quantity (TRQ) of: 100 pounds —
Pennsylvania / Right To Know Act:	Aluminium oxide is listed Aluminium oxide is hazardous to the environment (E) —

NFPA

Health hazard: 1
Fire hazard: 0
Instability hazard: 0

15.4. RESTRICTIONS FOR APPLICATION

Restricted to professional users.

15.5. DEMANDS FOR SPECIFIC EDUCATION

No specific requirements.

15.6. ADDITIONAL INFORMATION

Not applicable.

15.7. CHEMICAL SAFETY ASSESSMENT

No

15.8. SOURCES

OSHA Hazard Communication Standard (29 CFR 1910.1200)

SECTION 16: OTHER INFORMATION**THE FULL TEXT OF IDENTIFIED USES AS MENTIONED IN SECTION 1**

None known.

ABBREVIATIONS AND ACRONYMS

ACGIH = American Conference of Governmental Industrial Hygienists
ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CERCLA = Comprehensive Environmental Response Compensation and Liability Act
DOT = Department of Transportation
EINECS = European Inventory of Existing Commercial chemical Substances
EPCRA = Emergency Planning and Community Right-To-Know Act
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
HCIS = Hazardous Chemical Information System
HNOC = Hazards Not Otherwise Classified
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NFPA = National Fire Protection Association

NIOSH = National Institute for Occupational Safety and Health
OECD = Organisation for Economic Co-operation and Development
OSHA = Occupational Safety and Health Administration
PBT = Persistent, Bioaccumulative and Toxic
RCRA = Resource Conservation and Recovery Act
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SARA = Superfund Amendments and Reauthorization Act
SCL = A specific concentration limit.
STEL = Short-term exposure limits
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TSCA = The Toxic Substances Control Act
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

ADDITIONAL INFORMATION

Not applicable.

THE SAFETY DATA SHEET IS VALIDATED BY

Magnaflux

OTHER

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product.

Information in this safety data sheet cannot be used as a product specification.

Country-language: US-en