

1. IDENTIFICATION

1.1 Product Identity

Product Name **Tris(dimethylamino)silane**
Formula **$((\text{CH}_3)_2\text{N})_3\text{SiH}$**

1.2 Supplier of the Safety Data Sheet

Company PentaPro Materials Inc.
No.13, Daye 1st Rd., Xinshi Dist.,
Tainan City 74146, Taiwan
Tel. 886-6-5050135
Fax. 886-6-5050138

1.3 Emergency Contact Number

Tel. 886-6-5050135

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.
Water-react. 2 H261 In contact with water releases flammable gas.



GHS06 Skull and Crossbones

Acute Tox. 3 H301 Toxic if swallowed.
Acute Tox. 3 H311 Toxic if contact with skin.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.



GHS07 Exclamation Mark

Acute Tox. 4 H332 Harmful if inhaled.

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2.2 Label elements

GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms



GHS02



GHS06



GHS05



GHS07

Signal word

Danger

Hazard statements

H226	Flammable liquid and vapor.
H261	In contact with water releases flammable gas.
H301	Toxic if swallowed.
H311	Toxic if contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H332	Harmful if inhaled.

Precautionary statements

P231+P232	Handle under inert gas, protect from moisture.
P303+P361+P353	If on skin(or hair): Take off 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.
P403+P233	Store in a well-ventilated. Keep container tightly closed.
P422	Store contents under inert gas.
P501	Dispose of contents/ container in accordance with local/ national/ international regulations.

2.3 Other hazards

No additional information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixture

Formula	$((\text{CH}_3)_2\text{N})_3\text{SiH}$
Molecular Weight	161.32

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3.2 Hazardous ingredients according to Regulation (EC)

Component		Classification	Concentration
Tris(dimethylamino)silane			
CAS-No.	15112-89-7	Flam. Liq. 3 Water-react. 2 Acute Tox. 3 Acute Tox. 3	100%
EC-No.	239-165-0	Skin Corr. 1B Eye Dam. 1 Acute Tox. 3	

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice	Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident. In case of irregular breathing or respiratory arrest provide artificial respiration.
After inhalation	Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.
After skin contact	Immediately wash with water and soap and rinse thoroughly.
After eye contact	Rinse opened eye for several minutes under running water. Then consult a doctor.
After eye contact	Do not induce vomiting; immediately call for medical help. Drink copious amounts of water and provide fresh air. Immediately call a doctor.

4.2 Most important symptoms and effects, both acute and delayed

No additional information available

4.3 Indication of any immediate medical attention and special treatment needed

No additional information available.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing agents

Sand. Do not use water.

CO₂, sand, extinguishing powder. Do not use water

For safety reasons unsuitable extinguishing agents

Water with full jet

5.2 Special hazards arising from the substance or mixture

Do not stay in dangerous zone without suitable chemical protection clothes and self-contained breathing apparatus. Prevent fire-fighting water from entering surface water or ground water.

5.3 Advice for firefighters

Avoid inhalation of material or combustion by-products.

5.4 Protective equipment

Wear self-contained breathing apparatus for fire-fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Avoid breathing vapors, mist, gas. Evacuate personnel to safe areas.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to Section 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s)

No additional information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with limit values that require monitoring at the workplace.

General protective and hygienic measures:

Keep away from foodstuffs, beverage and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes.

Avoid contact with the eyes and skin

8.2 Exposure controls

Personal protective equipment



Eye Protection

Tightly sealed goggles



Hand Protection

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance

Form	Liquid
Color	Light yellow
Odor	No Data Available
Odor threshold	No Data Available
pH-value	No Data Available
Melting point	No Data Available
Boiling point	145-148°C
Flash point	No Data Available
Flammability	No Data Available
Decomposition	No Data Available
Auto igniting	No Data Available
Explosion limits	Lower: No Data Available Upper: No Data Available
Vapor pressure	12 mmHg
Relative density	0.84 at 20 °C
Evaporation rate	No Data Available
Solubility/Miscibility	Not miscible or difficult to mix
Partition coefficient	No Data Available
Viscosity	No Data Available
Organic solvents	0.0%

9.2 Other information

No additional information available.

10.-TABILITY AND REACTIVITY

10.1 Reactivity

No additional information Available

10.2 Chemical stability

May ignite on exposure to air. May react violently with water at normal temperature and pressure. Contact with water or moist air may release flammable gases. May explode when heated.

10.3 Possibility of hazardous reactions

Will not polymerize.

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10.4 Conditions to avoid

Avoid contact with air. Keep dry. Keep out of water supplies and sewers.

10.5 Incompatible materials

Oxidizing materials.

10.6 Hazardous decomposition products

Oxides of carbon, oxides of silicon

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity No additional information available.

Primary irritant effect

on the skin Caustic effect on skin and mucous membranes.

on the eye Strong caustic effect. Strong irritant with the danger of severe eye injury

Inhalation Garlic odor, metallic taste, drowsiness, hair loss, nausea, vomiting, dizziness, blood disorders, paralysis, brain damage, death.

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

Additional toxicological information

No additional information available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No additional information available.

12.2 Persistence and degradability

No additional information available.

12.3 Bioaccumulative potential

No additional information available.

12.4 Mobility in soil

No additional information available.

12.5 Other adverse effects

No additional information available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

13.2 Uncleaned packagings

Disposal must be made according to official regulations.

14. TRANSPORT INFORMATION

14.1 UN Number

DOT	3129
IMDG	3129
IATA	3129

14.2 UN proper shipping name

DOT	Water-reactive liquid, corrosive, n.o.s
IMDG	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.
IATA	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.

14.3 Transport hazard class(es)

DOT

Class 4.3 Substances which, in contact with water, emit flammable gases
Label 4.3+8

IMDG/IATA

Class 4.3 Substances which, in contact with water, emit flammable gases
Label 4.3+8

14.4 Packing group

DOT	II
IMDG	II
IATA	II

14.5 Environmental hazards:

Marine pollutant No

14.6 Special precautions for user

Danger code (Kemler)	—
EMS Number	F-G,S-N

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

14.8 Transport/Additional information

DOT(Quantity limitations)	
On passenger aircraft/rail	—
On cargo aircraft only	Forbidden
IMDG	
Limited quantities (LQ)	—
Excepted quantities (EQ)	—
Code	—

14.9 UN "Model Regulation"

UN 3129 WATER-REACTIVE LIQUID, CORROSIVE, N.O.S., 4.3 (8), I.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

No additional information available.

Sara

Section 355 (extremely hazardous substances):

Substance is not listed.

Section 313 (Specific toxic chemical listings):

Substance is not listed.

TSCA (Toxic Substances Control Act)

Substance is listed.

Proposition 65

Chemicals known to cause cancer:

Substance is not listed.

Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

Chemicals known to cause developmental toxicity:

Substance is not listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

Substance is not listed.

TLV (Threshold Limit Value established by ACGIH)

Substance is not listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

16. OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Abbreviations and acronyms:

ADR	Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG	International Maritime Code for Dangerous Goods
DOT	US Department of Transportation
IATA	International Air Transport Association

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ACGIH	American Conference of Governmental Industrial Hygienists
EINECS	European Inventory of Existing Commercial Chemical Substances
CAS	Chemical Abstracts Service (division of the American Chemical Society)
Flam. Liq. 3	Flammable Liquids, Category 3
Water-react. 2	Substances and Mixtures which, in contact with water, emit flammable gases, Category 2
Acute Tox. 3	Acute toxicity Category 3
Acute Tox. 4	Acute toxicity Category 4
Skin Corr. 1B	Skin corrosion/ irritation, Category 1B
Eye Dam. 1	Serious eye damage/ eye irritation, Category 1

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