1. Identification

1.1. Product identifier

Trade name	Dynasylan® 1122
Chemical Name	Bis(triethoxysilylpropyl)amine
CAS-No.	13497-18-2

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified	For industrial use
Function	Coupling agent Crosslinking agents Surface modifier

1.3. Details of the supplier of the safety data sheet

Company	Evonik Corporation USA 299 Jefferson Road Parsippany,NJ 07054-0677 USA
Telephone	973-929-8000
Telefax	973-929-8040
Email address	Product-Regulatory-Services@Evonik.com

1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:

CHEMTREC - US & CANADA:	800-424-9300
CHEMTREC MEXICO:	01-800-681-9531
CHEMTREC INTERNATIONAL:	+1 703-527-3887 **(collect calls accepted)**
Product Regulatory Services :	973-929-8060

2. Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation 29CFR 1910.1200

Skin irritation	Category 2	H315
Eye irritation	Category 2A	H319

2.2. Label elements

Statutory basis: Classification according to Regulation 29CFR 1910.1200

Symbol(s):

Signal word	Warning
Hazard statement	H315 - Causes skin irritation. H319 - Causes serious eye irritation.
Precautionary statement: Prevention	P264 - Wash skin thoroughly after handling. P280 - Wear protective gloves/ eye protection/ face protection.
Precautionary statement: Reaction	P302 + P352 - IF ON SKIN: Wash with plenty of water/ soap. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P332 + P313 - If skin irritation occurs: Get medical advice/ attention. P337 + P313 - If eye irritation persists: Get medical advice/ attention. P362 + P364 - Take off contaminated clothing and wash it before reuse.

2.3. Other hazards

3. Composition/information on ingredients

• **Bis(triethoxysilylpropyl)amine**	<= 91%
CAS-No. 13497-18-2	
Skin irritation	Category 2
Eye irritation	Category 2A

4. First aid measures

4.1. Description of first aid measures

General advice
Remove contaminated or saturated clothing immediately and dispose of safely.

Inhalation
If aerosol or mists are inhaled, take affected persons out into the fresh air. Possible discomforts include severe irritation of mucus lining (nose, throat, eyes), cough, sneezing and flow of tears. In case of persistent discomfort, obtain medical attention immediately.

Skin contact
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Obtain medical attention. Wash clothing before reuse. Destroy or thoroughly clean contaminated shoes before reuse.

Eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Do not allow contaminated water to contact the unaffected eye or face during irrigation of an affected eye.
Consult an ophthalmologist.

Ingestion
If accidentally swallowed, rinse mouth thoroughly with water and afterwards, drink plenty of water. In case of discomfort, obtain medical attention.
Never administer anything by mouth to an individual who rapidly losing conciousness, unconscious or convulsing.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms
After absorbing large amount of substance, apply therapy for irritative effects. If substance has been swallowed, early endoscopy is recommended in order to assess mucosa lesions in the esophagus and stomach which may appear. If necessary, suck away leftover substance. Allergic reactions cannot be excluded. Apply treatment of allergic reaction if necessary.

4.3. Indication of any immediate medical attention and special treatment needed
If required, therapy of irritative effect.
If substance has been swallowed:
Early endoscopy in order to assess mucosa lesions in the oesophagus and stomach which may appear. If necessary, aspirate leftover substance.

5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media: Use water spray or fog, foam, dry chemical or CO2.
Unsuitable extinguishing media: High volume water jet.

5.2. Special hazards arising from the substance or mixture
Hazardous fumes in fires, specific to the product:
nitrogen oxides (NOx)

5.3. Advice for firefighters
As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective equipment.

6.2. Environmental precautions
Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

6.3. Methods and material for containment and cleaning up
Soak up with absorbent material, e.g., sand, silica gel, acid binder, universal binder or sawdust. Place in a marked, sealable container and dispose of in accordance with existing federal, provincial, state and local regulations.

7. Handling and storage

7.1. Precautions for safe handling
Avoid contact with eyes, skin and clothing. Use with adequate ventilation. Avoid breathing vapor or mist. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage
Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.

8. Exposure controls/personal protection

8.1. Control parameters

• **Ethanol**		
CAS-No. Control parameters	64-17-5 1000 ppm 1900 mg/m3	Permissible exposure limit:(OSHA Z1)
Control parameters	1000 ppm 1900 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)
Control parameters	1000 ppm	Short Term Exposure Limit (STEL):(ACGIH)
Control parameters	1000 ppm 1900 mg/m3	Time Weighted Average (TWA):(TN OEL)

8.2. Exposure controls

Engineering measures

Provide for good ventilation if vapors/aerosols are formed.

Personal protective equipment

Respiratory protection

A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Hand protection

Glove material	for example, butyl-rubber
Material thickness	0.5 mm
Break through time	>= 480 min
Glove material	for example, Fluorinated rubber (Viton)
Material thickness	0.4 mm
Break through time	>= 480 min

The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use.
Suitability for specific workplaces should be clarified with protective glove manufacturers.
Use impermeable gloves.

Eye protection

Use chemical splash goggles or face shield.

Skin and body protection

A safety shower and eye wash fountain should be readily available.
To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

Hygiene measures

Avoid contact with skin, eyes and clothing. Do not inhale vapors or aerosols. Do not eat, drink, or smoke when using the product. Remove contaminated or saturated clothing.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

physical state	liquid
Colour	yellowish
Form	liquid

Odour	amine-like
Odour Threshold	not determined
pH	not determined
Melting point/range	< -38.0 °C Method: ISO 3841
Boiling point/range	> 300 °C (1013 hPa) Method: ASTM D-1120
Flash point	> 140 °C Method: ISO 2592 95 °C Method: EC Method A.9
Evaporation rate	not determined
Flammability (solid, gas)	no data available
Lower explosion limit	not determined
Upper explosion limit	not determined
Vapour pressure	< 0.01 hPa (20 °C) Method: ASTM D 2879-86
Relative vapour density	no data available
Density	0.97 g/cm3 (20 °C) Method: DIN 51757
Water solubility	not miscible decomposition by hydrolysis
Partition coefficient: n-octanol/water	not determined
Autoignition temperature	255 °C
Thermal decomposition	not determined
Viscosity, dynamic	5.5 mPa.s (20 °C) Method: DIN 53 015

9.2. Other information

no data available

10. Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid
Protect from moisture.

10.5. Incompatible materials
alkalis, Alcohols, atmospheric humidity, Acids, water

10.6. Hazardous decomposition products
Ethanol in case of hydrolysis

Incompatibility with atmospheric humidity, water, alkalis, acids, alcohols.

11. Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity	LD50 Rat: 4580 mg/kg Method: OECD Test Guideline 401 Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	No data available
Acute dermal toxicity	LD50 Rat: > 2000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity (limit test)
Skin irritation	Rabbit Skin irritation Method: OECD Test Guideline 404
Eye irritation	Rabbit Eye irritation Method: OECD Test Guideline 405
Sensitization	No data available
Assessment of STOT single exposure	No data available
Assessment of STOT repeat exposure	No data available
Risk of aspiration toxicity	No data available
Gentoxicity in vitro	No data available
carcinogenicity assessment	Contains no carcinogenic substances as defined by NTP, IARC and/or OSHA.
Toxicity to reproduction	No data available

12. Ecological information

12.1. Toxicity

Toxicity to fish	LC50 Scophtalmus maximus (turbot): > 200 mg/l Method: OECD 203
Toxicity in aquatic invertebrates	EC50 Acartia tonsa: > 200 mg/l Method: ISO 14669
Toxicity to algae	EC50 Phaeodactylum tricornutum: 118 mg/l / 72 h Method: ISO 10253
	NOEC Phaeodactylum tricornutum: 58.5 mg/l / 72 h Method: ISO 10253

12.2. Persistence and degradability

Biodegradability	Exposure time: 28 d Result: 64.5 % not completely biodegradable Method: OECD 306
	Exposure time: 60 d Result: 71 % not completely biodegradable Method: OECD 306

12.3. Bioaccumulative potential

Bioaccumulation	No data available

12.4. Mobility in soil

Mobility	No data available

12.5. Other adverse effects

Further Information	No further information available

13. Disposal considerations

13.1. Waste treatment methods

Product

Waste must be disposed of in accordance with federal, state, provincial and local regulations.

Incineration is the preferred method.

Uncleaned packaging

Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities.

If there is product residue in the emptied container, follow directions for handling on the container's label.

Incorrect disposal or reuse of this container is illegal and can be dangerous.

Other countries: observe the national regulations.

14. Transport information

Not dangerous according to transport regulations.

14.1.	UN number:	--
14.2.	UN proper shipping name:	--
14.3.	Transport hazard class(es):	--
14.4.	Packing group:	--
14.5.	Environmental hazards (Marine pollutant):	--
14.6.	Special precautions for user:	Yes

Not dangerous according to transport regulations.

15. Regulatory information

US Federal Regulations

OSHA

If listed below, chemical specific standards apply to the product or components:

- None listed

Clean Air Act Section (112)

If listed below, components present at or above the de minimus level are hazardous air pollutants:

- None listed

CERCLA Reportable Quantities

If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- None listed

SARA Title III Section 311/312 Hazard Categories

The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard

SARA Title III Section 313 Reportable Substances

If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

- None listed

Toxic Substances Control Act (TSCA)

If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed

State Regulations

The Listing requirements of the Right to Know (RTK) legislation varies by state. All information for NJ, PA, MA and other states can be derived from the listing of hazardous and non-hazardous components in section 2 and 15 of this MSDS.

California Proposition 65

A warning under the California Drinking Water Act is required only if listed below:

- None listed

An employer using HMIS/NFPA labeling must through training ensure that its employees are fully aware of the hazards of the chemicals used.

HMIS Ratings

Health :	2
Flammability :	1
Physical Hazard :	1

NFPA Ratings

Health :	2
Flammability :	1
Reactivity :	1

16. Other information

Further information

Revision date 05/13/2015

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.

Legend

ACC	American Chemistry Council
ACGIH	American Conference of Governmental Industrial Hygenists
ACS	Advisory Committee on Sustainability
ADI	Acceptable Daily Intake
ASTM	American Society for Testing and Materials
ATP	Adaptation to Technical Progress
BCF	Bioconcentration factor
BOD	Biochemical oxygen demand
c.c.	closed cup
CAO	Cargo Aircraft Only
Carc	Carcinogen
CAS	Chemical Abstract Services
CDN	Canada
CEPA	Canadian Environmental Protection Act
CERCLA	Comprehensive Environmental Response – Compensation and Liability Act
CFR	Code of Federal Regulations
CMR	carcinogenic-mutagenic-toxic for reproduction
COD	Chemical oxygen demand
DIN	German Institute for Standardization
DMEL	Derived minimum effect level
DNEL	Derived no effect level
DOT	Department of Transportation
EC50	half maximal effective concentration
EPA	Environmental Protection Agency
ErC50	Reduction of Growth Rate
ERG	Emergency Response Guide Book
FDA	Food and Drug Administration
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
GLP	Good Laboratory Practice
GMO	Genetic Modified Organism
HCS	Hazard Communication Standard
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO-TI	International Civil Aviation Organization- Technical Instructions
ICCA	International Council of Chemical Association
ID	Identification number
IMDG	International Maritime Dangerous Goods
IUPAC	International Union of Pure and Applied Chemistry
ISO	International Organization For Standardization
LC50	50 % Lethal Concentration
LD50	50 % Lethal Dose
L(E)C50	LC50 or EC50
LOAEL	Lowest observed adverse effect level
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Pollution from Ships
NFPA	National Fire Protection Association
NOAEL	No observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
o. c.	open cup
OECD	Organisation for Economic Cooperation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PBT	Persistent, bioaccumulative, toxic
PEC	Predicted effect concentration
PNEC	Predicted no effect concentration
RQ	Reportable Quantity
SDS	Safety Data Sheet
STOT	Specific Target Organ Toxicity
UN	United Nations
vPvB	very persistent, very bioaccumulative

voc	volatile organic compounds
WHMIS	Workplace Hazardous Materials Information System
WHO	World Health Organization