

VM 651

Version 3.0

Issue Date : 11/02/2018 Ref. 130000024743
Revision Date : 11/02/2018

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : VM 651
Product Use : Electrical/electronic industries
Solvent

Restrictions on use : For Industrial and Professional Use Only

Manufacturer/Supplier : Hitachi Chemical DuPont MicroSystems LLC.
250 Cheesecake Road
Parlin, New Jersey 08859

Product Information : 800-346-5656
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Flammable liquids	Category 4
Acute toxicity (Oral)	Category 4
Skin corrosion	Category 1B
Serious eye damage/eye irritation	Category 1
Skin sensitisation	Category 1

Label content

Pictogram :



Signal word : Danger

VM 651

Version 3.0

Issue Date : 11/02/2018 Ref. 130000024743
Revision Date : 11/02/2018

Hazardous warnings : Combustible liquid.
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.

Hazardous prevention measures : Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
If skin irritation or rash occurs: Get medical advice/ attention.
Wash contaminated clothing before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

No hazards to be specially mentioned.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

VM 651

Version 3.0

Issue Date : 11/02/2018
Revision Date : 11/02/2018

Ref. 130000024743

Component	CAS-No.	Concentration
3-Aminopropyltriethoxysilane	919-30-2	<=100 %

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

- General advice : No applicable data available.
- Inhalation : If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
- Skin contact : Wash off with soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.
- Eye contact : Immediately flush eyes for at least 15 minutes. Get medical attention.
- Ingestion : If swallowed Rinse mouth with water. Call a physician or poison control centre immediately. DO NOT induce vomiting unless directed to do so by a physician or poison control center.
- Most important symptoms/effects, acute and delayed : No applicable data available.
- Protection of first-aiders : No applicable data available.
- Notes to physician : No applicable data available.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Carbon dioxide (CO₂), Dry chemical, Foam
- Unsuitable extinguishing media : Water
- Specific hazards : Hazardous decomposition products formed under fire conditions. (see also section 10) Avoid breathing decomposition products.

VM 651

Version 3.0

Issue Date : 11/02/2018 Ref. 130000024743
Revision Date : 11/02/2018

Special protective equipment for firefighters : Exposure to decomposition products may be a hazard to health. Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Evacuate personnel to safe areas. Stop spill/release if it can be done with minimal risk. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Wear suitable protective equipment.

Environmental precautions : Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Clean contaminated floors and objects thoroughly while observing environmental regulations.

Spill Cleanup : Contain spill. Soak up with inert absorbent material. Collect and contain contaminated absorbent and dike material for disposal. Keep in suitable, closed containers for disposal. Ventilate the area. Clean contaminated surface thoroughly.

Accidental Release Measures : Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel) : Avoid inhalation, ingestion and contact with skin and eyes. Do not use in areas without adequate ventilation. Keep container closed when not in use. Take care to avoid waste and spillage when weighing, loading and mixing the product.
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Contaminated work clothing should not be allowed out of the workplace. Remove contaminated clothing and protective equipment before entering eating areas. Remove and wash contaminated clothing before re-use.

Handling (Physical Aspects) : Avoid formation of dust and aerosols. Keep away from heat and sources of

VM 651

Version 3.0

Issue Date : 11/02/2018 Ref. 130000024743
 Revision Date : 11/02/2018

ignition.

Dust explosion class : No applicable data available.
 Storage : Store in original container. Store at room temperature. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from sources of ignition - No smoking. Do not store or consume food, drink or tobacco in areas where they may become contaminated with this material. Keep container closed when not in use. Do not reuse empty container.
 Storage period : No applicable data available.
 Storage temperature : <= 35 °C (<= 95 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Local exhaust or a laboratory hood should be used when handling the materials. Maintain air concentrations below occupational exposure standards.

Personal protective equipment
 Respiratory protection : Provide adequate ventilation. No personal respiratory protective equipment normally required. Where there is potential for airborne exposures in excess of applicable limits, wear approved respiratory protection with dust/mist cartridge. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Consult the respirator manufacturer to determine the appropriate type of equipment for a given application. Observe respirator use limitations specified by the manufacturer.

Hand protection : Material: Solvent-resistant gloves
 Additional protection: Gloves must be inspected prior to use., Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough., As the product is a mixture of several substances, the durability of the glove materials cannot be calculated in advance and has to be tested before use., The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., Request information on glove permeation properties from the glove supplier., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Eye protection : Wear safety glasses with side shields. Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne

VM 651

Version 3.0

Issue Date : 11/02/2018 Ref. 130000024743
Revision Date : 11/02/2018

contact with this material.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Impervious clothing
Safety shoes
Where there is potential for skin contact have available and wear as appropriate:
Chemical resistant apron

Protective measures : All chemical protective clothing should be visually inspected prior to use.
Clothing and gloves should be replaced in case of chemical or physical damage or if contaminated.

Exposure Guidelines
Exposure Limit Values

3-Aminopropyltriethoxysilane

No applicable data available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Physical state : liquid
Form : liquid
Color : none

Odor : amine-like

Odor threshold : No applicable data available.

pH : 11 at 20 g/l 20 °C (68 °F)

Melting point/freezing point : Melting point
-70 °C (-94 °F)

Boiling point/boiling range : Boiling point
> 217 °C (423 °F)
Decomposes on heating.

Flash point : 93 °C

VM 651

Version 3.0

Issue Date : 11/02/2018 Ref. 130000024743
Revision Date : 11/02/2018

Evaporation rate : No applicable data available.
Flammability (solid, gas) : No applicable data available.
Upper explosion limit : 4.5 vol%
Lower explosion limit : 0.8 vol%
Vapor pressure : 11 hPa at 20 °C (68 °F)
Vapour density : No applicable data available.
Density : 0.95 g/cm³ at 20 °C (68 °F)
Specific gravity (Relative density) : No applicable data available.
Water solubility : Decomposes in contact with water.
Solubility(ies) : No applicable data available.
Partition coefficient: n-octanol/water : No applicable data available.
Auto-ignition temperature : No applicable data available.
Ignition temperature : 300 °C
Decomposition temperature : >217 °C
Viscosity, kinematic : No applicable data available.
Viscosity, dynamic : No applicable data available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Exothermic reaction with acids.
Chemical stability : The product is chemically stable under recommended conditions of storage, use and temperature.
Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions : polymerisation
Polymerization will not occur. Reacts with the following substances: Water

VM 651

Version 3.0

Issue Date : 11/02/2018 Ref. 130000024743
Revision Date : 11/02/2018

Conditions to avoid : Heat, flames and sparks. Exposure to moisture
Incompatible materials : Oxidizing agents Acids, Water
Hazardous decomposition products : Hazardous decomposition products: Carbon monoxide, Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Silicon dioxide

SECTION 11. TOXICOLOGICAL INFORMATION

3-Aminopropyltriethoxysilane

Inhalation : Rat
An LC₅₀/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.

Dermal LD₅₀ : 4,290 mg/kg , Rabbit

Oral LD₅₀ : 1,570 mg/kg , Rat

Skin irritation : Causes burns., Rabbit

Eye irritation : Corrosive, Rabbit

Skin sensitization : May cause sensitisation by skin contact., Guinea pig

Repeated dose toxicity : Oral
Rat
-
NOAEL: 200 mg/kg Method: OECD Test Guideline 408
No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.
Animal testing did not show any carcinogenic effects.

Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

VM 651

Version 3.0

Issue Date : 11/02/2018 Ref. 130000024743
 Revision Date : 11/02/2018

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION**Aquatic Toxicity**

3-Aminopropyltriethoxysilane	
96 h LC50	: Danio rerio (zebra fish) > 934 mg/l OECD Test Guideline 203 Information given is based on data obtained from similar substances.
72 h ErC50	: Desmodesmus subspicatus (green algae) > 1,000 mg/l Directive 67/548/EEC, Annex V, C.3.
72 h NOEC	: Desmodesmus subspicatus (green algae) 1.3 mg/l Directive 67/548/EEC, Annex V, C.3.
48 h EC50	: Daphnia magna (Water flea) 311 mg/l OECD Test Guideline 202

Environmental Fate

3-Aminopropyltriethoxysilane	
Biodegradability	: Biodegradable Directive 67/548/EEC Annex V, C.4.A. Readily biodegradable.
Bioaccumulation	: OECD Test Guideline 305C Bioaccumulation is unlikely.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product	: If recycling is not practicable, dispose of in compliance with local regulations. Never place unused product down any indoor or out door drain.
Waste disposal methods - Container	: Do not reuse empty container. Contaminated/not cleaned containers should be treated/handled like product waste. Dispose of container properly.

VM 651

Version 3.0

Issue Date : 11/02/2018 Ref. 130000024743
 Revision Date : 11/02/2018

Refer to applicable Local, State/Provincial, and Federal Regulations, as well as industry Standards.

Contaminated packaging : No applicable data available.

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 1760
	Proper shipping name	: Corrosive liquids, n.o.s. (3-(Triethoxysilyl)propylamine)
	Class	: 8
	Packing group	: II
IATA_C	UN number	: 1760
	Proper shipping name	: Corrosive liquid, n.o.s. (3-(Triethoxysilyl)propylamine)
	Class	: 8
	Packing group	: II
IMDG	UN number	: 1760
	Proper shipping name	: CORROSIVE LIQUID, N.O.S. (3-(Triethoxysilyl)propylamine)
	Class	: 8
	Packing group	: II
	Labelling No.	: 8

SECTION 15. REGULATORY INFORMATION

TSCA : On the inventory, or in compliance with the inventory

SARA 311/312 Hazard classification : Flammable (gases, aerosols, liquids, or solids)
 Acute toxicity (any route of exposure)
 Skin corrosion or irritation
 Serious eye damage or eye irritation
 Respiratory or skin sensitisation

SARA 313 Regulated Chemical(s) : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65 : This product does not contain any substances requiring a warning under the

VM 651

Version 3.0

Issue Date : 11/02/2018 Ref. 130000024743
Revision Date : 11/02/2018

Safe Drinking Water and Toxic Enforcement Act.

SECTION 16. OTHER INFORMATION

Issue Date : 11/02/2018
Revision Date : 11/02/2018

Contact person : HD MicroSystems™, Customer Service, 800-346-5656

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.