

VM 651

Version 2.1

Revision Date 11/02/2012

Ref. 130000024743

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
 MSDS Number : 130000024743
 Product Use : Solvent, Electrical/electronic industries
 Manufacturer : HD MicroSystems™
 250 Cheesequake Road
 Parlin, New Jersey 08859
 Product Information : 800-346-5656
 Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Potential Health Effects

Skin

3-
 Aminopropyltriethoxysilane : Corrosion with pain, ulceration or blisters, cracking or peeling of skin. May cause skin sensitization reactions in certain individuals.

Eyes

3-
 Aminopropyltriethoxysilane : Corrosive, may cause permanent eye injury if not promptly treated.

Carcinogenicity

Material	IARC	NTP	OSHA
Ethanol	1	X	

VM 651

Version 2.1

Revision Date 11/02/2012

Ref. 130000024743

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
3-Aminopropyltriethoxysilane	919-30-2	>95%

SECTION 4. FIRST AID MEASURES

- 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.
- Inhalation : If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. 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.

SECTION 5. FIREFIGHTING MEASURES

- Flammable Properties
- Flash point : 93 °C (199 °F)
- Ignition temperature : 300 °C (572 °F)
- Lower explosion limit/ lower flammability limit : 0.8 vol%
- Upper explosion limit/ upper flammability limit : 4.5 vol%

VM 651

Version 2.1

Revision Date 11/02/2012

Ref. 130000024743

- Fire and Explosion Hazard** : Hazardous decomposition products formed under fire conditions. (see also section 10) Avoid breathing decomposition products.
- Suitable extinguishing media** : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Carbon dioxide (CO₂), Dry chemical, Foam
- Firefighting Instructions** : Exposure to decomposition products may be a hazard to health. Wear self contained breathing apparatus for fire fighting if necessary. 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.
- 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** : 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. 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

VM 651

Version 2.1

Revision Date 11/02/2012

Ref. 130000024743

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 ignition.

Storage : Store in original container. 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 temperature : 20 - 30 °C (68 - 86 °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

VM 651

Version 2.1

Revision Date 11/02/2012

Ref. 130000024743

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.

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.
 Lightweight protective clothing
 Safety shoes

Exposure Guidelines
 Exposure Limit Values

Ethanol				
PEL:	(OSHA)	1,000 ppm	1,900 mg/m ³	8 hr. TWA
TLV	(ACGIH)	1,000 ppm	STEL	
AEL *	(DUPONT)	1,000 ppm	8 & 12 hr. TWA	

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form : liquid
 Color : none
 Odor : amine-like
 Water solubility : Decomposes in contact with water.

SECTION 10. STABILITY AND REACTIVITY

VM 651

Version 2.1

Revision Date 11/02/2012

Ref. 130000024743

Stability	: Stable at normal temperatures and storage conditions.
Conditions to avoid	: Heat, flames and sparks.
Incompatibility	: Oxidizing agents
Hazardous decomposition products	: Hazardous decomposition products: Carbon monoxide, Carbon dioxide (CO ₂), Silicon dioxide
Hazardous reactions	: Polymerization will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

3-Aminopropyltriethoxysilane

Dermal LD50	: 4,290 mg/kg , rabbit
Dermal	: rabbit Kidney effects
Oral LD50	: 1,680 mg/kg , rat no data available
Oral	: rat Kidney effects
Inhalation 4 h LC50	: > 7.35 mg/l , rat
Skin irritation	: rabbit Corrosive
Eye irritation	: rabbit Corrosive
Skin sensitization	: Causes sensitization., guinea pig
Repeated dose toxicity	: Inhalation rat Respiratory irritation Dermal

VM 651

Version 2.1

Revision Date 11/02/2012

Ref. 130000024743

rabbit

No adverse effects expected.

Oral

rat

No toxicologically significant effects were found.

- Mutagenicity : Animal testing did not show any mutagenic effects.
Did not cause genetic damage in cultured bacterial cells.
- Reproductive toxicity : Animal testing showed no reproductive toxicity.
- Teratogenicity : Animal testing showed no developmental toxicity.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

3-Aminopropyltriethoxysilane

96 h LC50 : Danio rerio (zebra fish) > 934 mg/l

72 h EbC50 : Algae 603 mg/l

48 h EC50 : Daphnia magna (Water flea) 331 mg/l

SECTION 13. DISPOSAL CONSIDERATIONS

- Waste Disposal : If recycling is not practicable, dispose of in compliance with local regulations.
Never place unused product down any indoor or out door drain.
- Container Disposal : Do not reuse empty container.
Contaminated/not cleaned containers should be treated/handled like product waste.
Dispose of container properly.
Refer to applicable Local, State/Provincial, and Federal Regulations, as well as industry Standards.

VM 651

Version 2.1

Revision Date 11/02/2012

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SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 1760
	Proper shipping name	: Corrosive liquids, n.o.s. (3-(Triethoxysilyl)propylamine)
	Class	: 8
	Packing group	: II
	Labelling No.	: 8
	Reportable Quantity	: 100 lbs Ethanol
IATA_C	UN number	: 1760
	Proper shipping name	: Corrosive liquid, n.o.s. (3-(Triethoxysilyl)propylamine)
	Class	: 8
	Packing group	: II
	Labelling No.	: 8
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 Status	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	: SARA 313: 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.
CERCLA Reportable Quantity	: 10,000 lbs Based on the percentage composition of this chemical in the product.: Ethanol
California Prop. 65	: WARNING! This product contains a chemical or chemicals known to the State

VM 651

Version 2.1

Revision Date 11/02/2012

Ref. 130000024743

of California to cause cancer.Ethanol
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.Ethanol

PA Right to Know Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Ethanol

NJ Right to Know Regulated Chemical(s) : Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Ethanol

SECTION 16. OTHER INFORMATION

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.

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