

有害物質調査について

貴社益々ご清栄のこととお慶び申し上げます。
 平素は、日頃よりご高配を賜り、厚く御礼申し上げます。
 エアロフレックスに関する有害物質調査について、ご報告させていただきます。

1. 製品名

AEROTAPE TPAR0325100
 (エアロテープ-25 EA997NC-25/25mm × 10m 断熱粘着テープ(エアロテープ))

2. 調査物質 RoHS II 指令

- ・カドミウム及びその化合物
- ・六価クロム及びその化合物
- ・鉛及びその化合物
- ・水銀及びその化合物
- ・PBB及びPBDE
- ・フタル酸エステル(フタル酸ジ-2-エチルヘキシル、フタル酸ジブチル、フタル酸ブチルベンジル、フタル酸ジイソブチル)

3. 結果

物質名	含有の有無
カドミウム及びその化合物	含有無
六価クロム及びその化合物	含有無
鉛及びその化合物	含有無
水銀及びその化合物	含有無
ポリ臭化ビフェニル	含有無
ポリ臭化ジフェニルエーテル	含有無
フタル酸ジ-2-エチルヘキシル	含有無
フタル酸ジブチル	含有無
フタル酸ブチルベンジル	含有無
フタル酸ジイソブチル	含有無

4. 考察

上記調査対象物質は、当該製品の製造工程上、使用しておらずその生産工程においても混入する可能性も御座いませんので含有していないと考えます。但し、一部REACH SVHC報告物質の含有がありますので下記ご確認下さい。粘着剤に関しましては粘着剤メーカーの調査資料を添付致しますのでご確認をお願い申し上げます。

5. REACH SVHC報告物質

対象品	CAS NO	物質名	含有量
エアロフレックステープ/シート	1314-13-2	酸化亜鉛	1%
	123-77-3	アゾジカルボンアミド	7%
	120-78-5	MBTS	1%
	85535-85-9	塩素化パラフィン(中鎖)	5%
テープ等使用粘着剤	108-88-3	トルエン	21-23%



TEST REPORT

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The results relate only to the item tested.

Number: BKKH19013104

Applicant: AEROFLEX CO., LTD.
111/7, 111/11 M.2, T.MAKHAMKU, A.NIKOMPATTANA,
RAYONG 21180
ATTN: MS.BUNRAT

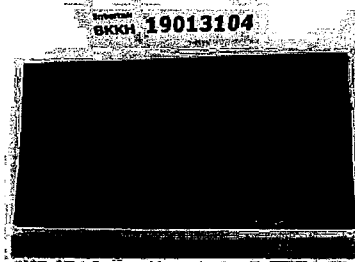
Date: Oct 08, 2019

Sample Submitted:

Quantity of sample: Two (2) pieces
Sample description: Black foam/adhesive
Date sample received: September 30, 2019

Client Information:

Item Name: Aeroflex with self - adhesive coating



Test conducted:

As requested by the applicant, for details please refer to attached page(s)
Type of test: RoHS wet chemical analysis

For and on behalf of :
Intertek Testing Services (Thailand) Ltd.,
Hardlines Laboratory

Ladtaka Wongwiboonporn
Laboratory Manager
Hardlines Department

Intertek Testing Services (Thailand) Ltd. 1285/5 Prachachuen Road, Tel + 662 765 2999
Wong-Sawang, Bangsue, Fax + 662 765 2936
Bangkok 10800 Thailand www.intertek.com



TEST REPORT

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Number: BKKH19013104

Test conducted:

(A) Test Result Summary:

Testing item	Result	LOD	LOQ
	Submitted samples		
Lead (Pb) Content (mg/kg)	ND	2	13
Cadmium (Cd) Content (mg/kg)	ND	1	5
Mercury (Hg) Content (mg/kg)	ND	3	13
Chromium (VI) (Cr ⁶⁺) Content (mg/kg)	ND	1	10
Polybrominated Biphenyls (PBBs) (mg/kg)			
Monobromobiphenyl (MonoBB)	ND	1	5
Dibromobiphenyl (DiBB)	ND	1	5
Tribromobiphenyl (TriBB)	ND	1	5
Tetrabromobiphenyl (TetraBB)	ND	1	5
Pentabromobiphenyl (PentaBB)	ND	1	5
Hexabromobiphenyl (HexaBB)	ND	1	5
Heptabromobiphenyl (HeptaBB)	ND	1	5
Octabromobiphenyl (OctaBB)	ND	1	5
Nonabromobiphenyl (NonaBB)	ND	1	5
Decabromobiphenyl (DecaBB)	ND	1	5
Sum. of Polybrominated Biphenyls (PBBs) (mg/kg)	ND	1	5
Polybrominated Diphenyl Ethers (PBDEs) (mg/kg)			
Monobromodiphenyl Ether (MonoBDE)	ND	1	5
Dibromodiphenyl Ether (DiBDE)	ND	1	5
Tribromodiphenyl Ether (TriBDE)	ND	1	5
Tetrabromodiphenyl Ether (TetraBDE)	ND	1	5
Pentabromodiphenyl Ether (PentaBDE)	ND	1	5
Hexabromodiphenyl Ether (HexaBDE)	ND	1	5
Heptabromodiphenyl Ether (HeptaBDE)	ND	1	5
Octabromodiphenyl Ether (OctaBDE)	ND	1	5
Nonabromodiphenyl Ether (NonaBDE)	ND	1	5
Decabromodiphenyl Ether (DecaBDE)	ND	1	5
Sum. of Polybrominated Diphenyl Ethers (PBDEs) (mg/kg)	ND	1	5
Phthalate Content (mg/kg)			
Diethyl hexyl phthalate (DEHP)	ND	15	25
Benzyl butyl phthalate (BBP)	ND	15	25
Dibutyl phthalate (DBP)	ND	15	25
DI-isobutyl phthalate (DIBP)	ND	15	25

Remark: mg/kg = Milligram per kilogram based on weight of sample = ppm
 LOD = Limit of detection
 LOQ = Limit of quantitation
 ND = Not detected (Less than LOD)

Tested component: Black foam/adhesive without liner

Testing period: September 30, 2019 to October 08, 2019



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Number: BKKH19013104.

Test conducted:

(B) RoHS Requirement:

Restricted substances	Limits
Lead (Pb)	0.1% (1000 mg/kg)
Cadmium (Cd)	0.01% (100 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr ⁶⁺)	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)
Diethyl hexyl phthalate (DEHP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Di-isobutyl phthalate (DIBP)	0.1% (1000 mg/kg)

The above limits were quoted from RoHS Directive (EU) 2015/863 for homogeneous material.

(C) Test method:

Testing item	Testing method
Lead (Pb) Content	With reference to IEC 62321-5 : 2013, by microwave digestion and determined by ICP-OES
Cadmium (Cd) Content	With reference to IEC 62321-5 : 2013, by microwave digestion and determined by ICP-OES
Mercury (Hg) Content	With reference to IEC 62321-4 : 2013/Amd1 : 2017, by microwave digestion and determined by ICP-OES
Chromium (VI) (Cr ⁶⁺) Content	With reference to IEC 62321-7-2 : 2017, by digestion solution and determined by UV-VIS spectrophotometer
Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321-6 : 2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary
Phthalate Content	With reference to IEC 62321-8 : 2017, by solvent extraction and determined by GC/MS



TEST REPORT

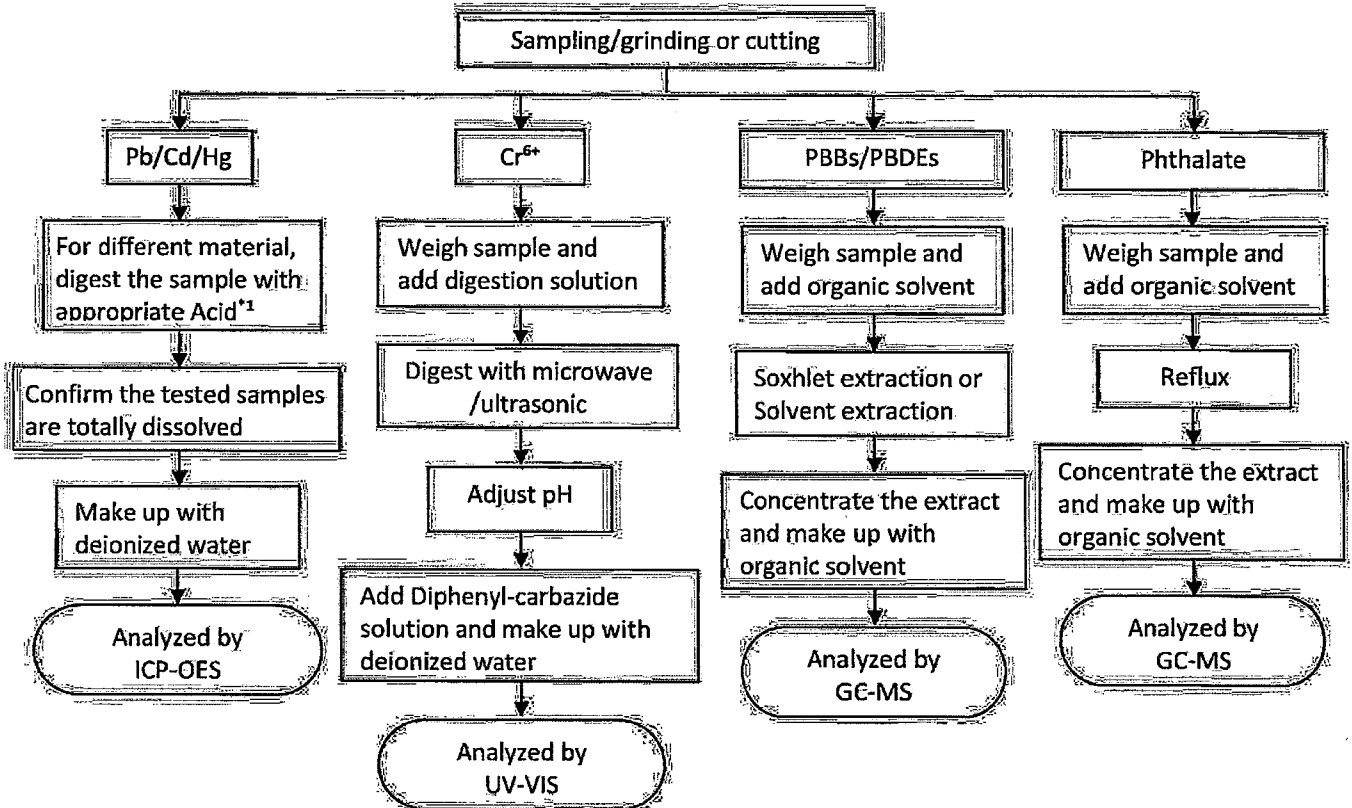
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Number: BKKH19013104

Test conducted:

(D) Measurement-Flowchart

Test for Pb/Cd/Hg/Chromium (VI)/PBBs/PBDEs/Phthalate Contents



Remark:

*1: List of appropriate Acid:

Material	Acid added for digestion.
Polymers	HNO ₃ , HCl

***** E N D *****/NS

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AEROFLEX CO., LTD

Date of issue: February 20, 2019

Revision: 00

SDS Number: UB-001

SAFETY DATA SHEET

ADHESIVE FOR COATING

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Identification of Product	☞	One component modified contact solvent base adhesive specially formulated for bonding Aeroflex closed cell insulation and other Elastomeric Thermal Insulation
Trade Name	☞	ADHESIVE FOR COATING
Manufacturer/Supplier	☞	AEROFLEX CO., LTD 111/7, 111/11 Mu 2 Tambol Makhamku, Amphur Nikompattana, Rayong Thailand. 21180
Telephone Number	☞	66-3891-7111-120
Fax Number	☞	66-3891-7121
Email Address	☞	marketing@aeroflex.co.th

SECTION 2 — HAZARDS IDENTIFICATION

Form & Order

Acrylic copolymer resin in vaporized organic solvent.

GHS Classification

Classification in Accordance with Regulation (EC) No 1272/2008 (CLP)

Flammable liq, Cat 2; Skin irritation, Cat 2; Reproduction toxic, Cat 2; Spec. target organ toxicity(single): Cat 3 Narcotic effect; Spec. target organ toxicity(repeated): Cat 3 Central nervous; Aspiration hazard, Cat 1; Aquatic toxicity: Acute+Chronic

SAFETY DATA SHEET

ADHESIVE FOR COATING

Hazard Pictograms



GHS02



GHS07



GHS08



GHS09

Signal Word

Danger

GHS Hazard Statements

Physical Hazard:

H225 Highly flammable liquid and vapour

Health Hazard:

H304 May be fatal if swallowed and enters airways

H315 Causes skin irritation

H336 May cause drowsiness or dizziness

H361 Suspected to damaging fertility or the unborn child

H373 May cause damage to organs

Environment Hazard:

H401 Toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effect.

GHS Precautionary Statements

Physical Hazard:

H225 Highly flammable liquid and vapor

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.



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- P241 Use explosion-proof electrical/ventilating/lighting equipment.
- P242 Use only non-sparking tools.
- P243 Take precautionary measures against static discharge.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P264 Wash hands thoroughly after handling.
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P281 Use personal protective equipment as required.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P271 Use only outdoors or in a well-ventilated area.
- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P273 Avoid release to the environment exposure. Central nervous system (CNS), Peripheral nervous system.

Response:

- P303+P361+P353 IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
- P370+P378 In case of fire: Use appropriate media for extinction.
- P302+P352 IF ON SKIN: Wash with plenty of soap and water.
- P321 Specific treatment (see details on label).
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P362 Take off contaminated clothing and wash before reuse.
- P308+P313 If exposed or concerned, get medical advice/attention.
- P304+P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P314 Get medical advice/attention if you feel unwell.
- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P331 Do NOT induce vomiting.
- P391 Collect spillage.

Storage:

- P403+P235 Store in a well-ventilated place. Keep cool.



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ADHESIVE FOR COATING

- P405 Store locked up.
- P233 Keep Container tightly closed.

Disposal:

- P501 Dispose of contents and container to appropriate waste site or recycler in accordance with local and national regulations.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

No.	Substance Name		Additional Information	
	Cas-No./EC No.	Hazardous Classification	Concentration	%
1	Acrylic copolymer		39-41	%wt
2	Toluene		21-23	%wt
	108-88-3	H225, H304, H315, H336, H361, H373, H401		
	203-625-9			
3	Ethyl Acetate		37-39	%wt
	141-78-6	H225		
	205-500-4			

SECTION 4 — FIRST AID MEASURES

Skin Contact: Prolonged or repeated skin contact can cause slight skin irritation wash with plenty of water and soap and consult a physician if irritation persists.



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Eye Contact:	Direct contact can cause irritation, wash immediately with plenty of water and consult a physician if irritation persists.
Inhalation:	Inhalation of vapor can cause headache, nausea, Irritation of nose, throat and lungs. To work in a well-ventilated area and consult a physician if irritation persists.
Swallowing:	If swallowed, do not give anything by mouth, consult a physician.

SECTION 5 — FIRE FIGHTING PROCEDURES

Flammable:	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
Suitable Extinguishing Media:	Alcohol-resistant foam, dry chemical, CO2, sand all extinguishing media are suitable and water spray may be used.
Unsuitable Extinguishing Media:	Direct water jet.
Exposure Hazard:	Product is solvent based and in the wet form it is a High fire hazard. The dried polymer is combustible. Decomposition products could be toxic.
Special Equipment:	Pressure demand self contained breathing apparatus should be provided to fire fighters in building or confined area where this material is stored. Do not use water in a jet.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Precautions with Respect to Individuals:	Wear proper protective equipment. Avoid repeated Skin contact.
Precautions with Respect to Environment:	<ul style="list-style-type: none"> - Prevent the product entering sewers and waterways. - Large spillages – contain & pump into containers Small spillages – absorb on sand, earth, collect into containers for disposal - Absorption on inert material and disposed of in accordance



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with federal, state and local regulations.

Cleaning Up Spillage:

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill after material pickup in complete.

SECTION 7 — HANDLING AND STORAGE

Handling Procedures and Equipment:

Guard against dust accumulation of this material. As with all chemicals good industrial and personal hygiene practice should be followed when handling this material. When the container is empty it may retain product residue including vapors which could accumulate. Therefore do not cut, drill or weld empty containers. Additionally do not conduct such activity near full, partially full or empty product containers without appropriate workplace safety authorization or permit and no eating and drinking in the workplace. Ensure adequate ventilation.

Storage Requirements:

product container from physical abuse. Keep the container tightly closed. Store in a cool, dry, well-ventilated storage area which keep away from sunshine and heat.

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Control:

No danger in normal ambient conditions. Users should determine the conditions for safe use of the product. Avoid repeated skin contact

Individual Protection:

- Respiration: Mask
- Hands: Chemicals proof gloves
- Eyes: goggles or safety glasses
- Skin: Medical lab coats



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SAFETY DATA SHEET

ADHESIVE FOR COATING

Control Parameters:

Occupational exposure limit values

No.	Substance Name	CAS No./EC No.
1	Toluene	108-88-3/203-625-9
	List of approved workplace exposure limits (WELs) / EH40	
	STEL	(100 ppm)/384 mg/m ³
	TWA	(50 ppm)/191 mg/m ³
2	Ethyl Acetate	141-78-6/205-500-4
	List of approved workplace exposure limits (WELs) / EH40	
	STEL	(-)/ 400 mg/m ³ .
	TWA	(-)/ 200 mg/m ³

DNEL and PNEC values

DNEL value (worker)

No.	Substance Name			CAS No./EC No.
	Route of exposure	Exposure Time	Effect	Value
1	Toluene			108-88-3/203-625-9
	Dermal	Long term (chronic)	Systemic	384 mg/kg/day
	Inhalative	Short term (acute)	Local	343 mg/m ³
	Inhalative	Short term (acute)	Systemic	384 mg/m ³
	Inhalative	Long term (chronic)	Local	192 mg/m ³
	Inhalative	Long term (chronic)	Systemic	192 mg/m ³
2	Ethyl Acetate			141-78-6/205-500-4
	Dermal	Long term (chronic)	Systemic	13964 mg/kg/day
	Inhalative	Long term (chronic)	Systemic	13964 mg/m ³

SAFETY DATA SHEET

ADHESIVE FOR COATING

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION (Con.)

DNEL value (Consumer)

No.	Substance Name			CAS No./EC No.
	Route of exposure	Exposure Time	Effect	Value
1	Toluene			108-88-3/203-625-9
	Oral	Short term (acute)	Systemic	226 mg/kg/day
	Oral	Short term (acute)	Local	8.13 mg/kg/day
	Inhalative	Long term (chronic)	Systemic	56.5 mg/m3
2	Ethyl Acetate			141-78-6/205-500-4
	Oral	Long term (chronic)	Systemic	4.5 mg/kg/day
	Dermal	Long term (chronic)	Systemic	37 mg/kg/day
	Inhalative	Short term (acute)	Systemic	734 mg/m3
	Inhalative	Long term (chronic)	Local	367 mg/m3
	Inhalative	Short term (acute)	Local	734 mg/m3
	Inhalative	Long term (chronic)	Systemic	367 mg/m3



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ADHESIVE FOR COATING

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION (Con.)

PNEC values

No.	Substance Name	CAS No./EC No.	
	Ecological Compartment	Type	Value
1	Toluene		108-88-3/203-625-9
	Water	Fresh water	0.68 mg/l
	Water	Fresh water sediment	16.39 mg/kg
	Soil		2.89 mg/kg
	Sewage Treatment Plant		13.61 mg/kg
2	Ethyl Acetate		141-78-6/205-500-4
	Water	Fresh water	0.26 mg/l
	Water	Marine water	0.026 mg/l
	Water	Aqua intermittent	1.65 mg/l
	Water	Fresh water sediment	1.25 mg/kg
	Water	Marine water sediment	0.125 mg/kg
	Soil		0.24 mg/kg
	Sewage Treatment Plant		650 kg/l
	Secondary Poisoning		200 mg/kg



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SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Viscous fluid
Polymer Type:	Acrylic copolymer
Color (APHA):	150 Max
Odor:	pungent
Viscosity; Spindle no.4, 20 rpm, 30°C:	3,000 – 4,000 cps.
Solid contents; 160°C, 40min:	39-41%
Solubility in water:	Insoluble
Tg, calculation:	~ -36°C
Flammability:	N/A
Auto Ignition temp.:	N/A
Explosive/Oxidizing:	N/A

SECTION 10 — STABILITY AND REACTIVITY

Reactivity:	No dangerous reaction known under normal application condition.
Chemical Stability:	Stable under the recommended storage conditions.
Conditions to Avoid:	Avoid ignition sources
Materials to avoid:	Strong oxidizing agent, strong alkali

SECTION 11 — TOXICOLOGICAL INFORMATION

Information on the Component:	Contains Ethyl Acetate with LD50 oral rat: 4100 mg/kg
	Contains Toluene with LD50 oral rat: 636 mg/kg.

SECTION 12 — ECOLOGICAL INFORMATION

Persistence and Degradability:	This product may not be released into the environment.
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ADHESIVE FOR COATING

SECTION 13 — DISPOSAL CONSIDERATIONS

Waste Disposal: Elimination by incineration is recommended. After mixing with an inert filler (sawdust, sand), treat as a solid industrial waste in agreement with local, regional and national legislation.

SECTION 14 — TRANSPORT INFORMATION

Proper Shipping Name: Adhesive
UN number: 1133
UN Class: 3
Packing group: II

SECTION 15 — REGULATORY INFORMATION

International Inventory Status Eines: May be commercialized according EEC/92/32 directive.

SECTION 16 — OTHER INFORMATION

This information is based on our current level of knowledge and related to the product in the state in which it is delivered.

It is intended to describe our products from the point of the view of safety requirements and is not intended to guarantee any particular properties.