



Wistron NeWeb Corporation

# Specification

<b>Customer Name</b>			
<b>Date</b>	5/14/2004		
<b>OEM P/N</b>	DBA-BSMA-01		
<b>Description</b>	Omnidirectional Antenna For 802.11g/a		
<b>Version</b>	A00	<b>Doc. Version</b>	1

<b>Provided By</b> Wistron NeWeb Corp	<b>Reviewed By</b> Wistron NeWeb Corp	<b>Approved By</b> Customer Company
Steven Chang	Eric Fang	



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<http://www.wneweb.com>

## Electrical Specifications

<b>Frequency Range(GHz)</b>	<b>2.4~2.5 / 4.9 ~5.85</b>
<b>Gain (dBi)</b>	<b>2.4GHz: 2 (typical) 5.1GHz: 2.5 (typical) 5.8Ghz: 2.5(typical)</b>
<b>VSWR</b>	<b>2:0:1 Max.</b>
<b>Return Loss</b>	<b>-10db Max.</b>
<b>HPBW in Hozirontal (deg.)</b>	<b>360</b>
<b>HPBW in Vertical (deg.)</b>	<b>78 (typical)</b>
<b>Polarization</b>	<b>Linear, Vertical</b>
<b>Impedance</b>	<b>50 Ohms (typical)</b>

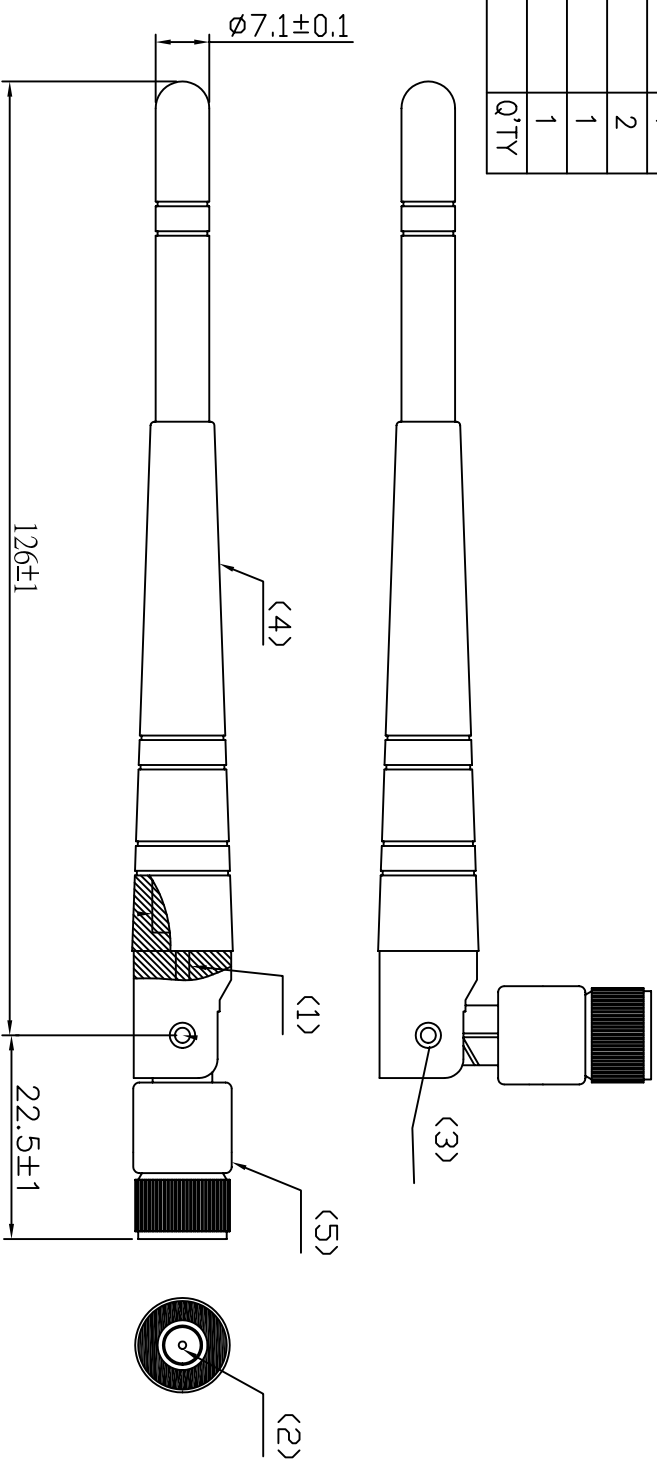
## Mechanical Specifications

<b>Connector type</b>	<b>SMA PLUG R/P (MALE-FEMALE)</b>
<b>Plastic Color</b>	<b>Black</b>
<b>Coaxial Cable Type</b>	<b>RG-178/U</b>
<b>Coaxial Cable Type</b>	<b>Light Orange</b>
<b>Radome Material</b>	<b>TPE</b>
<b>Radiator Material</b>	<b>Brass</b>
<b>Working Temperature &amp; Humidity</b>	<b>-25°C - +75°C 90% @ 25°C</b>

PART NUMBER BLOCK	
PART NUMBER	REV

REVISONS			
REV	DESCRIPTION	DATE	APPROVED

(5)	BASE : ABS	1
(4)	COVER : TPE	1
(3)	RIVET ,BLACK SURFACE	2
(2)	SMA(MALE TO FEMALE)	1
(1)	COAXIAL CABLE	1
NO.	DESCRIPTION	Q'TY



UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN: mm AND TOLERANCES ARE:

INTEGRAL DIMENSIONS	$\pm 0.5$	ANGULAR DIMENSIONS	$\pm 1'$
1 PLACE DECIMAL	$\pm 0.3$	HOLES UNDER	$\phi 5.00$
2 PLACE DECIMALS	$\pm 0.2$		

MATERIAL: SEE NOTES  
FINISH: SEE NOTES  
THIRD ANGLE PROJECTION

DWG TITLE: **Wistron 啟碁科技股份有限公司**  
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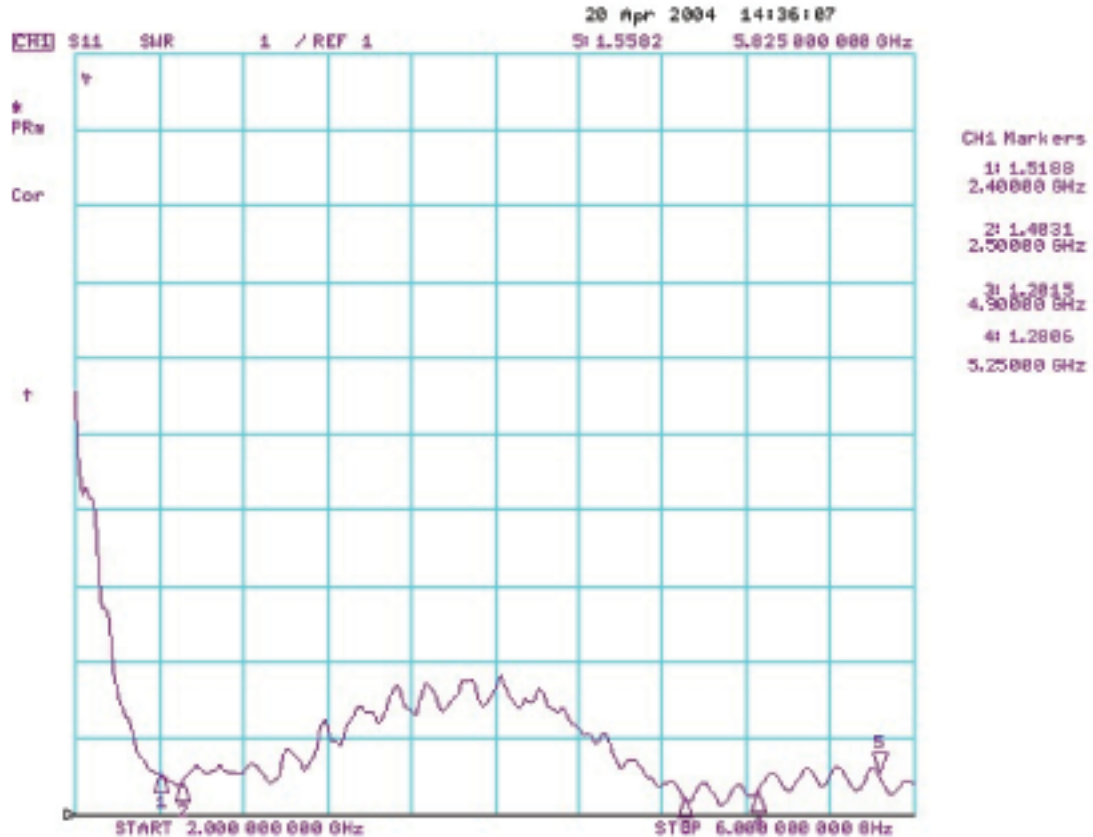
DRAWN	GUO CHANG	04/23/04	SIZE DWG NO.	DBA-SSMA-01	REV
ENGR	STEVEN CHANG	04/23/04	A4		0
APVD			SCALE	1/1	SHEET 1 OF 1

NEXT ASSY USED ON APPLICATION

# Electrical Specification Test Report

## VSWR & Return Loss for DBA-BSMA Antenna

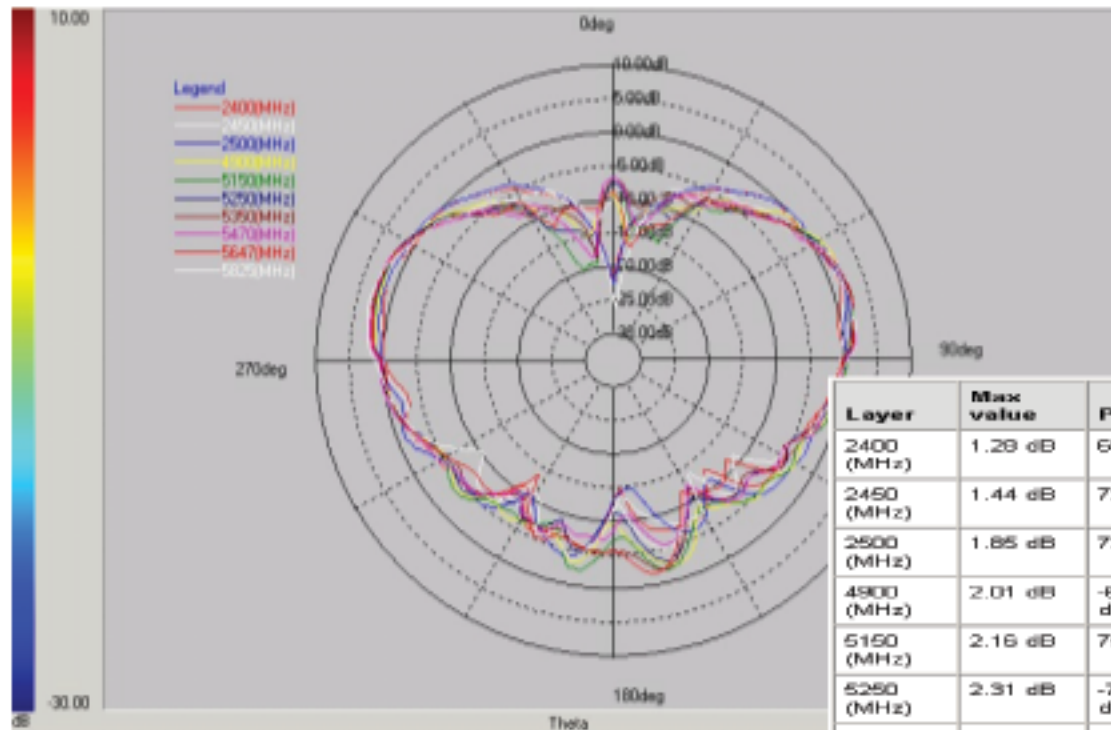
### VSWR



# Electrical Specification Test Report

## Antenna Radiation Pattern; DBA-BSMA Antenna

### Antenna pattern-ZX plane

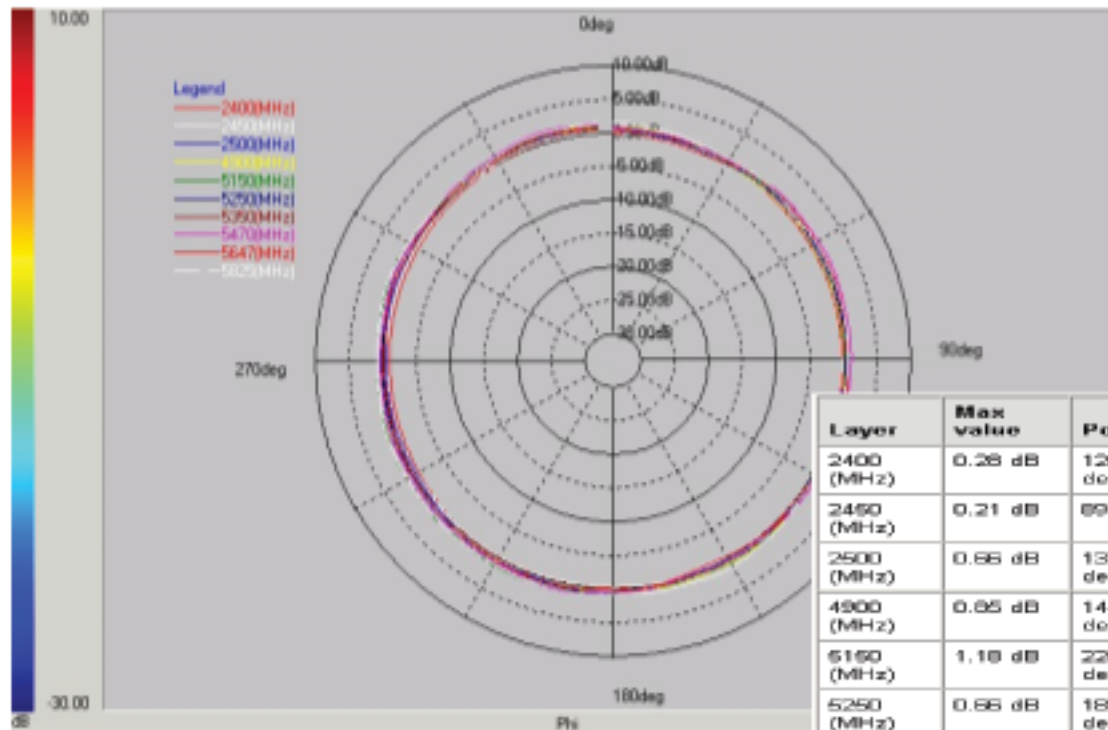


Layer	Max value	Position	Min value	Position	Average
2400 (MHz)	1.28 dB	69.00 deg	-22.21 dB	-0.01 deg	-3.98 dB
2450 (MHz)	1.44 dB	72.00 deg	-26.51 dB	3.00 deg	-3.79 dB
2500 (MHz)	1.85 dB	72.00 deg	-23.01 dB	-0.01 deg	-3.44 dB
4900 (MHz)	2.01 dB	-65.00 deg	-16.66 dB	6.02 deg	-3.26 dB
5150 (MHz)	2.16 dB	75.00 deg	-20.32 dB	-17.98 deg	-3.39 dB
5250 (MHz)	2.31 dB	-75.00 deg	-17.72 dB	-9.01 deg	-3.79 dB
5350 (MHz)	2.48 dB	75.00 deg	-19.03 dB	-9.01 deg	-3.52 dB
5470 (MHz)	2.41 dB	-69.00 deg	-18.62 dB	-11.98 deg	-3.78 dB
5647 (MHz)	2.51 dB	-72.00 deg	-17.28 dB	8.99 deg	-3.80 dB
5825 (MHz)	3.07 dB	-78.00 deg	-15.63 dB	8.98 deg	-3.68 dB

# Electrical Specification Test Report

## Antenna Raditation Pattern; DBA-BSMA Antenna

### Antenna pattern-XY plane



Layer	Max value	Position	Min value	Position	Average
2400 (MHz)	0.28 dB	126.01 deg	-1.05 dB	264.02 deg	-0.33 dB
2450 (MHz)	0.21 dB	69.99 deg	-0.59 dB	237.00 deg	-0.22 dB
2500 (MHz)	0.66 dB	137.98 deg	-0.45 dB	242.99 deg	0.16 dB
4900 (MHz)	0.65 dB	144.00 deg	-0.36 dB	33.01 deg	0.33 dB
5150 (MHz)	1.18 dB	226.00 deg	-0.12 dB	24.01 deg	0.62 dB
5250 (MHz)	0.66 dB	189.01 deg	-0.48 dB	26.99 deg	0.24 dB
5350 (MHz)	0.73 dB	344.98 deg	-0.02 dB	183.00 deg	0.42 dB
5470 (MHz)	1.33 dB	342.01 deg	-0.12 dB	161.99 deg	0.64 dB
5647 (MHz)	0.91 dB	99.02 deg	-0.78 dB	21.03 deg	0.18 dB
5825 (MHz)	1.39 dB	153.00 deg	0.25 dB	51.00 deg	0.81 dB



## TECHNICAL INFORMATION

### **ENSURE CA064 LOW ODOUR NO BLOOM CYANOACRYLATE**

#### **DESCRIPTION**

Holdtite CA064 is an alkoxy based Cyanoacrylate ester giving almost no perceptible odour, producing no blooming on bond surfaces.

CA064 is medium viscosity and is an ideal product to choose where low odour/vapours are required.

#### **TYPICAL APPLICATIONS**

Typical applications include applications requiring cosmetic finish such as high quality plastics, medical devices, and cosmetic cases.

#### **TYPICAL CURE PERFORMANCE**

Although functional strength is achieved relatively fast, usually in less than 2 minutes full strength continues to develop over a period of 24 hours. Fixture times vary and are dependent on humidity and also gap sizes and substrate contribute to this also. The smaller the gap the faster the cure rate. Where relative humidity is low below 50% RH times of cure will be slower and an activator/accelerator may be required to increase speed.

#### **TYPICAL PROPERTIES (UNCURED)**

Resin:.....Alkoxy Ethyl Cyanoacrylate  
Appearance:..... Colourless  
Specific Gravity:..... 1.05  
Viscosity:..... @ 60 RPM  
Brookfield DVII..... 60 cps  
Flashpoint:..... >85°C  
Odour:..... Faint  
Operating temperature -50°C -95°C

#### **TYPICAL CURED PROPERTIES**

Tensile Strength - Range ASTM D2095  
Grit blasted steel:..... 10-25 N/mm<sup>2</sup>  
Elastomer "N":..... 5-15 N/mm<sup>2</sup>

Shear Strength - Range ASTM D1002  
Grit blasted steel:..... 14-22 (18)  
Elastomer "N":..... 5-15 (10)  
ABS:..... 6-20 (14)  
Pvc:..... 3-10 (6)  
Nitrile:..... 5-15 (10)  
Neoprene:..... 5-15 (10)

#### CURE SPEED (FIXTURING)

Without activator:..... 20-90 seconds  
With activator:..... <30 seconds

#### **HEALTH & SAFETY**

Danger: bonds skin and eye tissue in seconds  
**READ FULL MSDS**

The information contained herein is produced in good faith and is believed to be reliable but is for guidance only. Holdtite and its agents cannot assume liability or responsibility for results obtained in the use of its products by persons whose methods are outside or beyond our control. It is the users responsibility to determine the suitability of any of the products and methods of use or preparation prior to use mentioned in our literature and furthermore the users responsibility to observe and adopt such precautions as may be advisable for the protection of personnel and property in the handling and use of any of our products.



## MATERIAL SAFETY DATA SHEET ENSURE CA064

1. Identification of Substances			
<b>Product details:</b> Single-component based on Cyanoacrylic acid/ethyl ester. More commonly known as Superglue/Cyanoacrylate.			
<b>Trade Name description:</b>		Spectrum Cyanoacrylate	
<b>Article Number:</b>		Ensure CA064	
<b>Manufacturers Name:</b>		Holdrite Adhesives Limited Ninth Avenue East, Tonn Valley Trading Estate, Gateshead, Tyne & Wear NE11 0EJ	
<b>Emergency Information:</b>		Tel: 0191 4914433	
2. Composition/Data on Components			
<b>Chemical characterisation:</b> CAS No. Designation: 27816-23-5 Methoxy Ethyl Cyanoacrylate Ester Identification Number(s): EDNCS Number: 2303915			
<b>Chemical characterisation</b> Description: Adhesive			
<b>Dangerous components:</b>			
	CAS No.	Designation	Index R-phrases
Void			
3. Hazards Identification			
<b>Additional information:</b> Cyanoacrylate! Danger bonds skin and cyclists within seconds. Keep out of reach of children.			
04. First Aid Measures			
<b>General information:</b> No special measures required			
After inhalation: Supply fresh air			
After skin contact: Instantly wash with soap and rinse thoroughly.			
After eye contact: Rinse opened eye for several minutes under running water. Then consult doctor.			
After swallowing: Call a doctor immediately.			
<b>Information for doctor:</b> The following symptoms may occur: Breathing difficulty			
<b>Treatment:</b> In cases of irritation to the lungs, initial treatment with Dexamethason metered aerosol.			
5. Fire Fighting Measures			
Suitable extinguishing measures: CO <sub>2</sub> , extinguishing powder or water jet. Fight larger fire with alcohol-resistant foam.			
Special hazards caused by the material, its products of combustion or flue gases: Formation of toxic gases is possible during heating or in case of fire. Can be released in case of fire: Nitrogen oxides (NOx), Carbon Monoxide (CO)			
<b>Protective equipment:</b> Do not inhale explosion gases or combustion gases.			
6. Accidental Release Measures			
<b>Person-related safety precautions:</b> Ensure adequate ventilation			
<b>Measures for environmental protection:</b> Prevent material from reaching sewage system, holes and cellars.			
<b>Measures for cleaning/collecting:</b> Collect mechanically			
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust)			
<b>Additional information:</b> No dangerous materials are released.			
7. Handling and Storage			
<b>Information for safe handling:</b> Ensure good ventilation/exhaustion at the workplace. No special measures required. Keep containers tightly sealed. Open and handle containers with care.			
<b>Information about protection against explosions and fires:</b> Keep ignition sources away - Do not smoke.			
<b>Storage</b>			
<b>Requirements to be met by storerooms and containers:</b> Store only in the original container.			
<b>Information about storage in one common storage facility:</b> Do not store together with alkalis (caustic solutions)			
<b>Further information about storage conditions:</b> Store in cool, dry conditions in well sealed containers.			
<b>Storage class:</b> Class according to regulation on inflammable liquids: VbF: A III			
8. Exposure Controls and Personal Protection			
<b>Additional information about design of technical systems:</b> No further data, see item 7			
<b>Components with critical values that require monitoring at the workplace:</b>			
CAS No.	Designation of material	Type	Value Unit
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.			
<b>Additional information:</b> Supply fresh air. When air is very dry humidity should be increased to 50-60% relative humidity of air.			
Cyanoacrylates are considered to be possible sensitises by inhalation, new legislation in 1996 may consider this as a formal risk, but as yet it is suggested as a safety phrase as additional information, see section 11.			
<b>Personal protective equipment</b>			
<b>General protective and hygienic measures:</b> The usual precautionary measures should be adhered to in handling the chemicals.			
<b>Breathing equipment:</b> Not required.			
<b>Protection of hands:</b> Protective gloves and protective skin cream.			
<b>Eye protection:</b> Tightly sealed safety glasses.			
TDS 51		HSS 51	

# Adhesive Material Report; Used in DBA-SSMA Antenna

## MATERIAL SAFETY DATA SHEET ENSURE CA064

9. Physical and Chemical Properties			
Form: Fluid Colour: Colourless Smell: Characteristic			
	Value/Range	Unit	Method
Change in condition			
Melting point / Melting range:	Not determined		
Boiling point / Boiling range:	> 200	°C	
Flash point:	47	°C	DIN 51758
Self-ignitability:	Product is not selfigniting.		
Danger of explosion:	Product is not explosive.		
Density at 20 °C:	1,05 - 1,08	g/cm <sup>3</sup>	
Solubility in / Miscibility with Water:	Not applicable Not miscible or difficult to mix		
Viscosity:			
dynamic: at 20 °C:	2 - 600	mPas	
10. Stability and Reactivity			
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.			
Dangerous reactions: Exothermic polymerisation. Violent reactions with strong alkalis and oxidising agents. Reacts with amines. Heating occurs when water is added.			
Reacts violently with water			
Dangerous products of composition: No dangerous decomposition products known			
11. Toxicological Information			
Acute toxicity: not determined			
Primary irritant effect:			
On the skin: Irritant for skin and mucous membranes			
On the eye: Irritant effect			
Sensitisation: Sensitisation possible by inhalation			
Additional toxicological information:			
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us. The material is not subject to classification according to EC lists in the last version.			
12. Ecological Information			
General notes:			
Water hazard class O (Self-assessment): generally not hazardous for water			
13. Disposal Considerations			
Product:			
Recommendation:			
Can be deposited with household garbage after consulting with the operator of the waste disposal facility and the pertinent authorities and under adherence to the necessary technical regulations			
Polymerise carefully with water or alkali.			
Waste disposal key number: 55905			
Uncleaned packaging:			
Recommendation: Polymerise carefully with water or alkali.			
14. Transport Information			
Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)			
ADR/RID-GGVS/E Class: 3 Inflammable liquids			
Number/Letter: 3/32 e			
Remarks: No dangerous goods due to the regulations for small quantities (below 3 l per unit or below 42 l per carton).			
15. Regulatory Information			
Designation according to EC guidelines:			
Observe the normal safety regulations when handling chemicals			
The product has not been classified and labelled in accordance with EC Directives / relevant national laws.			
Special designation of certain preparations:			
Cyanocrylate - Danger! Bonds skin and eyelids within seconds. Should be kept out of children's reach.			
National regulations:			
Classification according to VbB: A III			
Water hazard class:			
Water hazard class O (Self-assessment): generally not hazardous for water			
16. Other Information			
These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.			
Department issuing data specification sheet:			
Contact: Mr John Quinn Technical Director. Date of last revision: 24/08/99			
		TDS 51	HSS 51