

规格承认书

SPECIFICATION FOR APPROVAL

日期
Date 2026/03/24

编号
File No 26032401

版本
Revision 1.0

客户
CUSTOMER:

扬立铭

客户料号

CUSTOMER NO:

RG-Rotate

品名

PART NAME:

WIFI双频 Antenna L=80mm MHF

供方料号

SUPPLIER NO:

YJW01.137.224.301A

送样日期Date:

送样数量Q'TY:

客户确认CUSTOMER APPROVED BY

APPROVAL

CHIEF

SUPERVISOR

供方确认 SUPPLIER SIGNATURE

APPROVAL

CHECK

DESIGN

ChenGuoqiang

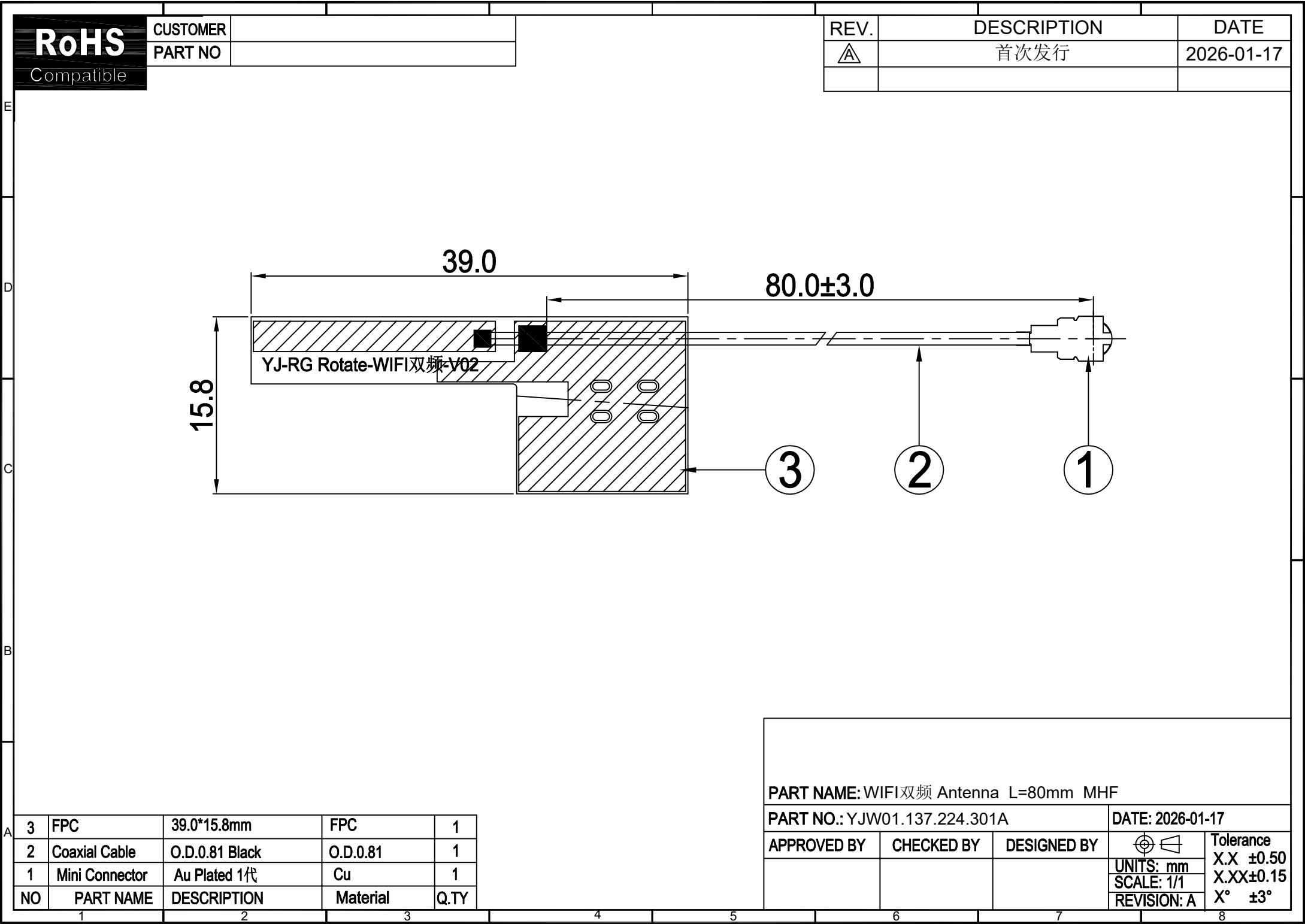
ZhangLiqun

LiaoGuangxi

YJ-RD-F04-A

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11	N/A	N/A	N/A
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RoHS
Compatible

CUSTOMER	
PART NO	

REV.	DESCRIPTION	DATE
△	首次发行	2026-01-17

3	FPC	39.0*15.8mm	FPC	1
2	Coaxial Cable	O.D.0.81 Black	O.D.0.81	1
1	Mini Connector	Au Plated 1代	Cu	1
NO	PART NAME	DESCRIPTION	Material	Q.TY

PART NAME: WIFI双频 Antenna L=80mm MHF				
PART NO.: YJW01.137.224.301A			DATE: 2026-01-17	
APPROVED BY	CHECKED BY	DESIGNED BY		Tolerance X.X ±0.50 X.XX±0.15 X° ±3°

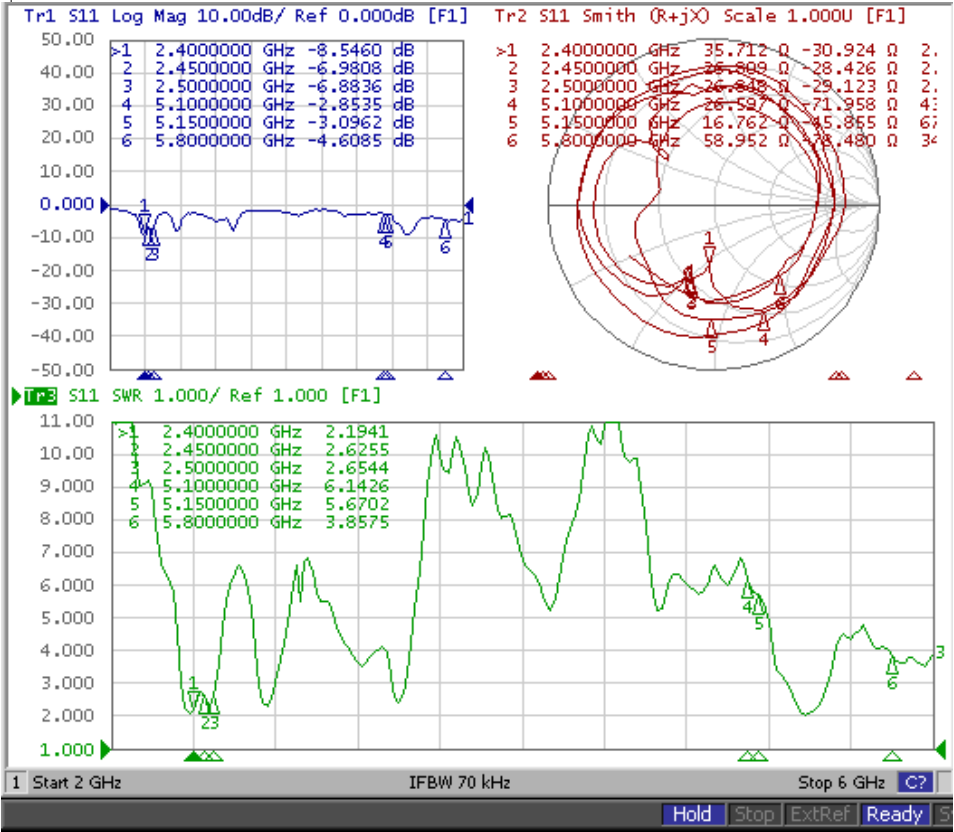
天线规格

Antenna Specification

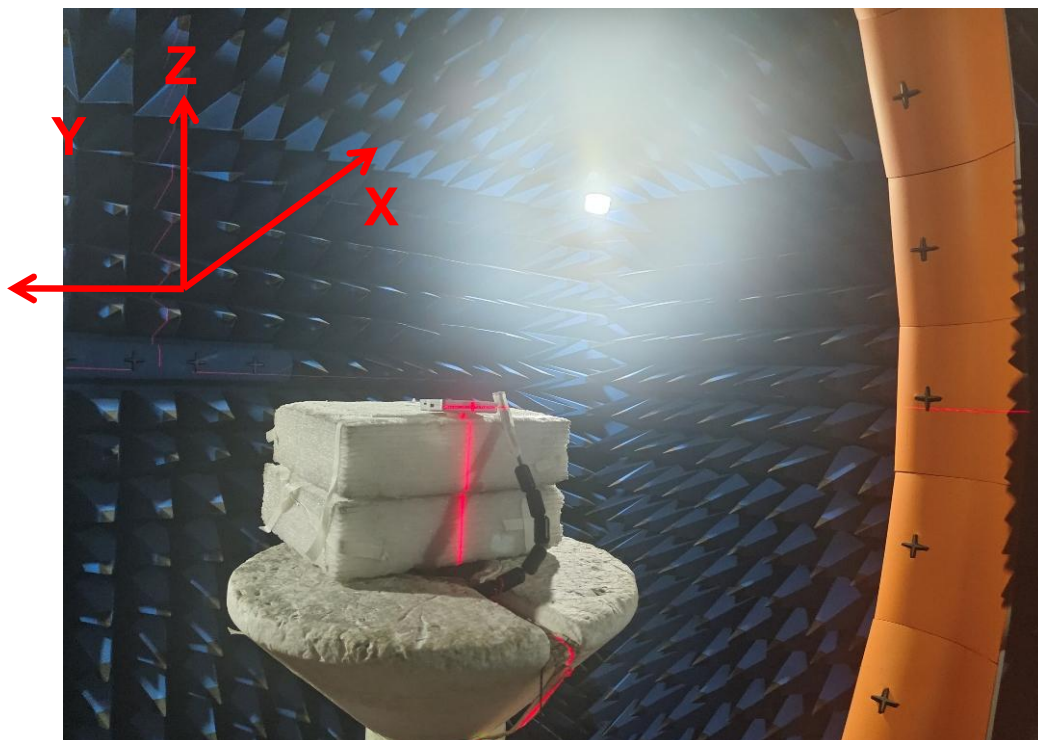
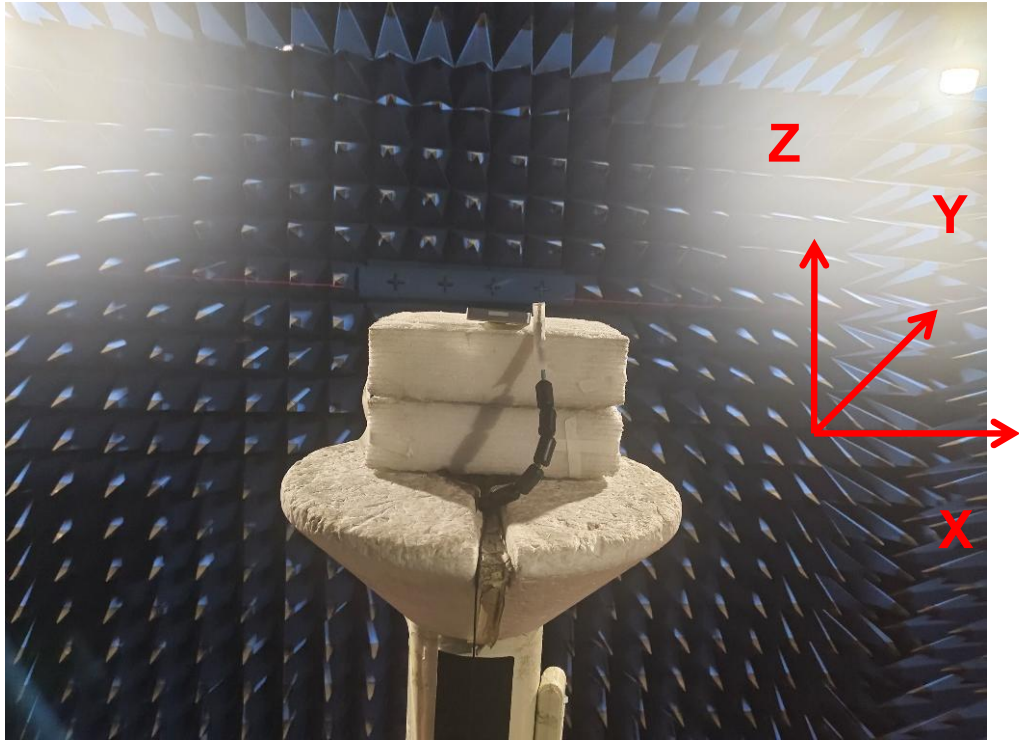
Electrical Properties	
Frequency	2.4-2.5GHz 5.15-5.85GHz
Impedance	50 Ohm Nominal
V.S.W.R	3.0 Max@2.4-2.5GHz 6.5 Max@5.15-5.85GHz
Gain	-7.9 dBi@2.4-2.5GHz -1.5 dBi@5.15-5.85GHz
Radiation	Omni-directional
Polarization	Linear
Physical Properties	
Connector	IPEX-1
Cable Type	O.D.0.81mm
Cable Length	80mm
Cable Color	Black
Operating Temp.	-40 ~ +85 °C
Storage Temp / Humidity	25±5°C / <70%

Antenna Performance Test

Agilent
E5071C
S
Parameter
Test //
Antenna



Antenna Passive Test



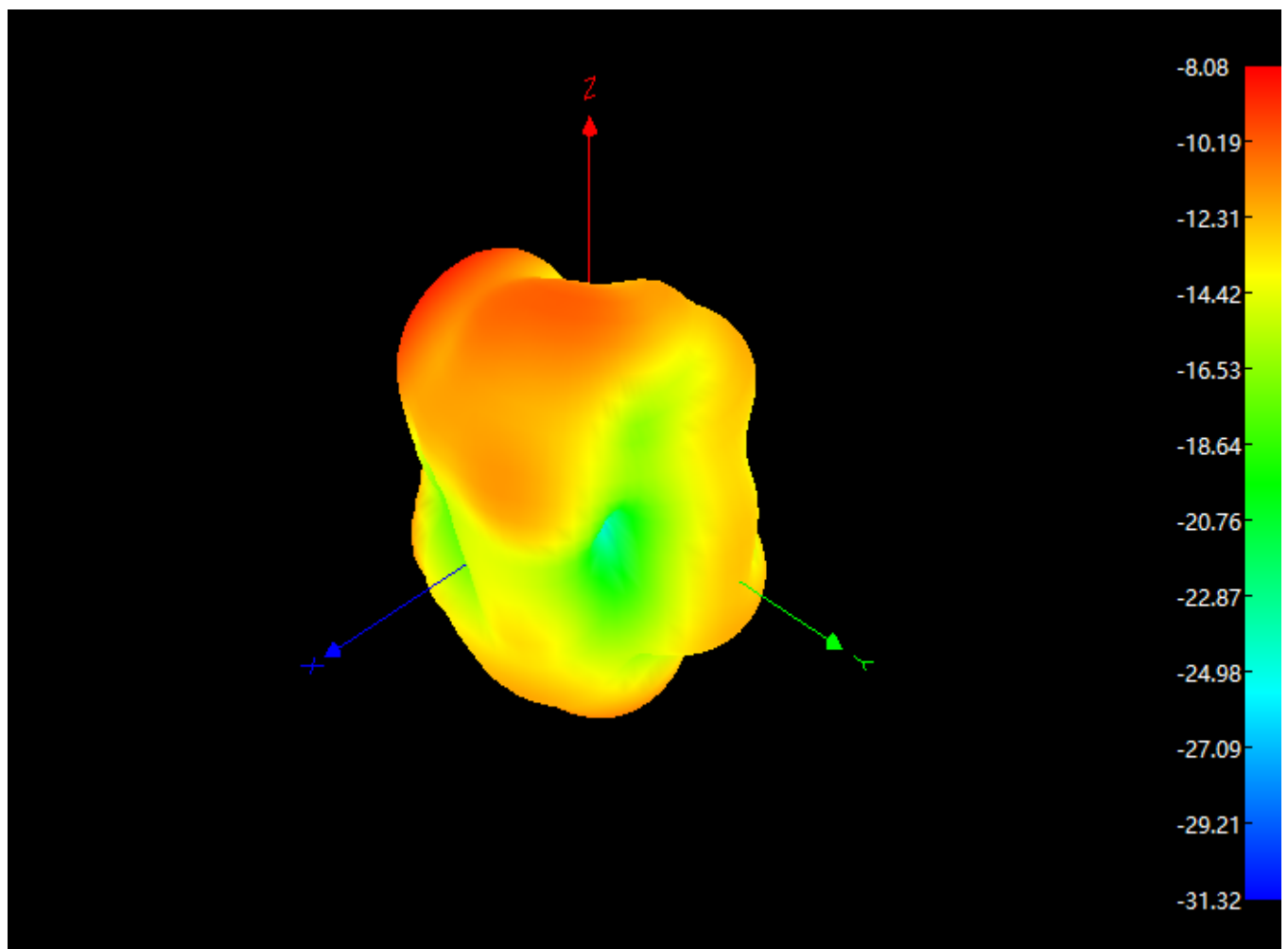
Passive Test For WiFi Antenna(2.4G)

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	7.8	-11.1	-8.0
2410	7.9	-11.0	-7.9
2420	7.8	-11.1	-8.1
2430	7.7	-11.1	-8.0
2440	7.7	-11.2	-8.2
2450	7.8	-11.1	-8.1
2460	7.6	-11.2	-8.2
2470	7.5	-11.2	-8.4
2480	7.5	-11.3	-8.5
2490	7.7	-11.1	-8.2
2500	7.6	-11.2	-8.4

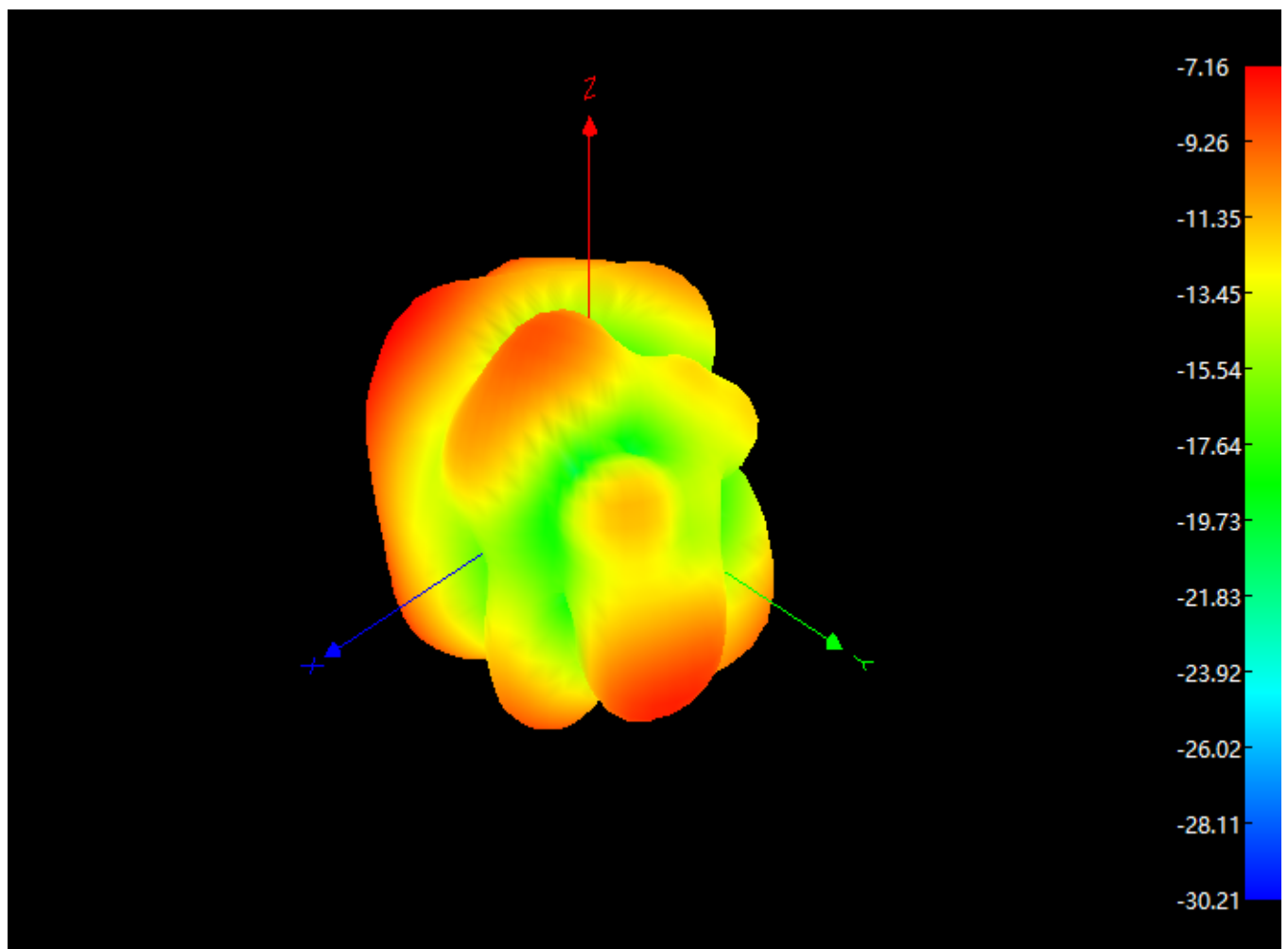
Passive Test For WiFi Antenna(5.8G)

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
5150	14.8	-8.3	-7.2
5200	12.9	-8.9	-4.3
5250	19.9	-7.0	-1.5
5300	16.4	-7.8	-3.0
5350	11.0	-9.6	-5.0
5400	11.7	-9.3	-4.8
5450	9.7	-10.1	-5.1
5500	6.3	-12.0	-6.8
5550	7.3	-11.4	-6.3
5600	8.7	-10.6	-6.3
5650	10.2	-9.9	-5.2
5700	13.6	-8.7	-3.8
5750	14.7	-8.3	-3.7
5800	13.1	-8.8	-3.7
5850	13.7	-8.6	-3.4

Radiation Pattern For WiFi Antenna(2450MHz)



Radiation Pattern For WiFi Antenna(5150MHz)



Device



WiFi Antenna



WiFi Antenna



物质安全资料表

MSDS C5100,C5191,C5210,C5240

物质安全资料表编号：MCL001	改版日期：02-15-2015
版次：4	前次改版：02-20-2008

1. 物质供应商资料

物品中(英)文名称：	磷青铜(PHOSPHOR BRONZE ALLOYS)		
物品代码：	JIS C5100,C5191,C5210,C5240		
化学名称：	铜(Cu)-锡(Sn) 金属合金		
类别：	铜金属合金		
制造商或供应商名称：	福建紫金铜业有限公司		
制造商或供应商地址：	福建省龙岩市上杭县南岗开发区		
制造商或供应商电话：	0597-3960633	传真：	0597-3833128
制造商或供应商网址：	www.fjzjty.com		
紧急联络电话：	0597-3960600		

2. 成品成分

C5100	CAS编号	化学名称	重量比例%
	7440-50-8	铜(Cu)	>93.65
	7440-31-5	锡(Sn)	4.5~5.5
	7723-14-0	磷(P)	0.03~0.35

C5191	CAS编号	化学名称	重量比例%
	7440-50-8	铜(Cu)	>92.15
	7440-31-5	锡(Sn)	5.5~7.0
	7723-14-0	磷(P)	0.03~0.35

C5210	CAS编号	化学名称	重量比例%
	7440-50-8	铜(Cu)	>90.0
	7440-31-5	锡(Sn)	7.0~9.0
	7723-14-0	磷(P)	0.03~0.35
	7440-66-6	锌(Zn)	<0.20
	7439-92-1	铅(Pb)	<0.05
	7439-89-6	铁(Fe)	<0.10

C5240	CAS编号	化学名称	重量比例%
	7440-50-8	铜(Cu)	>90.15
	7440-31-5	锡(Sn)	9~11
	7723-14-0	磷(P)	0.03~0.35

OSHA 管理状态：在固体时不具危害性。其粉尘及烟对肺脏、血液、肾脏具有致癌、刺激性。反复产生之毒性及神经性毒素

OHSA：本合金产品在固体时不具危害性。其粉尘及烟具有危害性。

(美国) 职业安全卫生署 OSHA

3. 危害辨识资料

警告！ 暴露于粉尘及烟的工作环境下，对于眼睛、呼吸系统、皮肤会造成刺激伤害。其含有金属可能对血液、肾脏产生反复性及神经性之影响，也可能致癌。必须保持足够且良好之通风。避免直接接触眼睛、皮肤及衣物。佩戴保护器具，包括护目镜、适当衣物，必须要保证全部身体。身体及衣物被接触之部位，必须彻底清洗干净。	
种类的名称：	铜、锡之金属混合物。
危险标识类别：	金属粉尘或烟将对皮肤、眼睛造成刺激性且对肺具有毒性，但金属合金本身不具危害性。
HMIS 危害级数（粉尘及烟）：	健康：2；可燃性：0（0=低、4=极高）； 物性危害：无
IDLH 对生命或健康有立即性危害浓度值	IDLH(3/1/95)无本金属立即性危险浓度数值。 铜(Cu)粉尘或烟、铅(Pb)、锡(Sn)：100 mg / m ³ 磷(P)：5 mg/m ³ 氧化铁(Fe)粉尘或烟：2500 mg / m ³ 氧化锌：500 mg / m ³

Hazardous Materials Identification System (HMIS)

严重症状：

眼睛：其粉尘或烟皆具刺激性，会引起红肿及疼痛。经常暴露于此环境时，可能导致结膜炎。

皮肤：此物质不会经由皮肤渗入体内被吸收。但接触其粉尘时，皮肤有可能会引起轻微刺激而出现红肿现象。

吸入：吸入人体是有害的。吸入高浓度粉尘或烟可能会导致剧烈呼吸、鼻刺激、咳嗽、呼吸困难。吸入高浓度铜金属粉尘或烟也可能出现呕心、呕吐及胃痛现象。金属烟可能引起类似流行性感（flu-like）症状之金属烟热；其症状包括喉咙不适、呼吸困难、咳嗽、哮喘、呕吐、头痛、发冷、发热、肌痛、虚弱、昏睡、流汗、关节痛。这些症状通常会在24小时后消失，但也有可能更长时间。

食入：大量食入粉尘时，可能引起呕心、腹泻及胃痛现象。

慢性影响：皮肤长期或者重复性接触其粉尘时可能引起剧烈刺激或皮肤炎。长期或者重复性吸入其粉尘或烟会导致更剧烈刺激。慢性暴露于铅中会引起人体肾脏损害、贫血症、复发性及成长性影响、永久性神经系统损害。

4. 急救措施

对于粉尘及烟危害：

眼睛接触：	以大量清净水冲洗上下眼睛内部（至少15分钟），若眼睛被刺激不适者，立即送医院检查
皮肤接触：	以清水清洗干净。衣物被接触之部位，必须彻底清洗干净后才能再穿戴。若仍有皮肤发生刺激、出疹现象或情况持续、复发时送至医院诊疗。
吸入时：	送至通风良好较阴凉处休息，以毛巾保暖，严重者迅速送医院检查诊断。
食入时：	大量喝水并催吐，迅速送医院检查

医疗提示：对于本产品组成之元素物质并无特殊解毒剂可供使用。必须视不同症状给予适当治疗。

5. 火灾及爆炸危害资料

燃烧性资料：

爆炸性：	无
可燃性：	无
燃烧性：	无
闪火点：	不适用
自燃性：	不适用

灭火剂：

小区域之材料粉末起火时，可适用干沙、干石灰粉、食盐或苏打粉给予关熄。其他周边处起火时需以适当灭火器灭火。

意外及爆炸危害：

注意粉尘可能导致爆炸或产生可燃性气体。

6. 泄露的处置

本产品在加工中产生粉尘时，有可能产生爆炸危害，必须将火源移除。也惟有粉尘型态时才可能产生泄露，所以必须装设通风设备及集尘装置过滤空气中之粉尘，以降低其粉尘浓度。

7. 取用及储运方式

取用注意事项：

板带产品之端面易割伤皮肤应小心取用。
切削加工时会产生粉尘应小心眼睛、皮肤及呼吸应佩戴保护器具。
小心粉尘不可泄露至空气中。
需注意产品有翻到之危险性易造成压伤，吊运时要十分注意。
打包带切除时，小心其末端会弹起，对人员之身体、皮肤及眼睛造成割伤。
衣物或器具上之粉尘以水洗或HEPA吸入器清除，不可用拍打或其他方式处理。

储存条件：

食储最高容许温度：无
避免放置于潮湿或酸/碱性物质或酸/碱性气体之场所

8. 人员暴露防设措施

CAS 编号	暴露标准：	OSHA(PEL)	ACGIH(TLV)
铜(Cu) 7440-50-8	烟烟	0.1 mg/m ³	0.2 mg/m ³
	粉尘及雾状	1 mg/m ³	1 mg/m ³
锡(Sn) 7440-31-5	粉状	2 mg/m ³	2 mg/m ³
磷(P) 7723-14-0	-	0.1 mg/m ³	0.1 mg/m ³
锌(Zn) 7440-66-6	-	无资料	无资料
铅(Pb) 7439-92-1	粉尘及烟烟	0.05 mg/m ³	0.05 mg/m ³
铁(Fe) 7439-89-6	-	无资料	无资料

本产品材料若经加热会产生烟烟，氧化锌烟烟可能形成。

OSHA(PEL)以及 ACGIH(TLV)对氧化锌烟烟之限制值为 5 mg/m³

呼吸防设：	一般情况下不需佩戴口罩。但当超过上述PEL/TLV标准值时必须佩戴NIOSH认证之全罩或半罩式HEPA滤心防口罩。
通风防设：	工作场所中，若是会产生烟烟及粉尘时，必须要有通风设备装置及集尘装置，且工作中不可饮食及抽烟
眼睛及脸部防设：	需要佩戴护目镜。
皮肤防设：	作业时应穿着适当之工作服，安全鞋及防护手套，以避免皮肤与材料直接接触并防止割伤。

(美国) 职业安全卫生署OSHA(Occupational Safety and Health Administration)

(美国) 国家职业安全卫生研究所NIOSH(National Institute for Occupational Safety and Health)

立即对生命或健康有危险 IDLH(Immediately Dangerous to Life or Health)

时量平均浓度TWA(Time Weighted Average)：

容许暴露浓度值 PEL(Permissible Exposure Limit)

9. 物理及化学性质

外观：	浅红色光泽的固态金属
熔点：	C5100(950~1060°C), C5191(900~1045°C), C5210(870~1030°C), C5240(840~1020°C)
沸点：	无资料
比重：	C5100(8.86), C5191(8.83), C5210(8.80), C5240(8.7)
蒸气压：	不适用
溶解度：	不适用
PH 值 25°C：	不适用

10. 稳定性及活性资料

稳定性	在正常一般室温及大气下为稳定性物质，非活性物质。
应避免之状况	遭受机械撞击或通电时并不会产生化性反应。
应避免之材料	氯：与金属黄铜、铜细分应形成剧烈或爆炸性反应。 乙炔：与黄铜形成爆炸性化合物。
危害之分解物	当加热至分解温度时，会产生金属氧化物和金属烟。有可能引起类似流行性感冒（flu-like）症状之金属烟热。
危害之聚合反应	无。

11. 毒性资料

潜在之暴露途径：

粉尘：食入、皮肤接触、吸入、眼睛接触。

烟：吸入、眼睛接触。

本合金产品不具毒性。

动物急毒性资料：动物半致死剂量 (LD₅₀)及浓度(LC₅₀)

针对本合金产品之粉尘或烟	铜 (Cu)	锡 (Sn)	磷 (P)	锌 (Zn)	铅 (Pb)	铁 (Fe)
口服 (LD ₅₀)	3.5mg/Kg(鼠，腹腔内)	无资料	无资料	无资料	无资料	30mg/Kg(鼠)
皮肤 (LD ₅₀)	375mg/Kg(兔，皮下注射)	无资料	无资料	无资料	无资料	无资料
吸入 (LC ₅₀)	无资料	无资料	无资料	无资料	无资料	无资料

亚慢性及慢性毒性：本合金产品不具毒性。铅对实验室中动物之血液、肾脏及神经系统会造成损害。

致癌性：本合金产品尚未被报告具致癌性。铅被 IARC(International Agency for Research on Cancer) 列入对人头可能致癌，属2B类

致基因突变型：本合金产品尚未被报告具致基因突变性。铅则在数项细胞体外试验中显示有致基因突变性。

复发性及成长性影响：本合金产品不具复发性及成长性影响。铅会导致实验室中动物之脱臼发育，包括天生畸形缺陷及影响雄性生殖能力。

神经性影响：本合金产品尚未被报告具有神经性影响。铅会导致实验室中动物之中枢、末梢神经系统损伤及行为影响。

12. 生态资料

本合金产品对生态之毒性：无资料

其单一成分之毒性说明如下：

生态毒性 ecotoxicity：水中的溶解度，在 0.1~1.0mg/l 范围内已被许多研究者证实对大多数鱼类不具有毒性。但浓度在 0.015-3.0mg/l 时，尤其在软水中，会有报告会对许多种类的鱼、甲头类的动物及软体动物、浮游生物具有毒性。
铅对大翻车鱼(Bluegill)/蓝思鱼(Lepomis macrochirus)LC₅₀(48Hrs)资料为 2~5mg/l。铅对水鸟类皆具毒性。

流动性：分解的铅会对转移入土壤内。

持续性/可分解性：铅在环境中会持续且累积。

生态累积性 (Bioaccumulation): 无资料。

13. 废弃处理

本合金产品不属于危害性废弃物：须丢弃时可以委托当地回收商予以回收再生利用。

14. 运输资料

USA DOT：未被列入。

运输时本产品不要直接与水接触，并且要注意会滑落、翻落得危险发生

15. 法规资料

通常无特定法令规定，但是在会产生粉尘的场所必须遵守劳工安全卫生法劳工作业环境空气中有害物质容许浓度标准

USA/OHSA：Occupational Safety & Health Administration

USA/ACGIH Guide to protective Clothing. Cincinnati, OH: American Conference of Government Industrial Hygienists, 1987

USA/SARA313

16. 其他资料

初版：04-28-2008

制表单位：福建紫金铜业有限公司

注意：本MSDS内容资料应被所有使用、运送、储存或暴露于本合金产品之公司/人员

充分了解并接受并将其应用于使用、加工、制造或管理与本合金产品有关之相关作业规定上；使用者请依应用需求，自行判断其可用性。本MSDS资料内容在编订时已经可能将最新之资料纳入，但对所有内容并不予以任何保证。

江阴凯博通信科技有限公司

环境有关物质材质证明书

Certification of the Raw Material of Environment Substance

公司名称 Company Name	江阴凯博通信科技有限公司	制造商名称 Manufacturer	江阴凯博通信科技有限公司	产品重量 Product Weight	1.51 g/m	
产品料号 Part No.	KB081/50-008D	产品名称 Product Name	RF0.81 银锡线黑色	客户料号 P/N.		
填写人姓名/部门 Name / Dept.	徐琳/工程部	联络电话 Telephone	(0510-86070002)	E-Mail	kaibo@kaibocable.com	

兹证明向贵公司销售的产品和半成品中，使用之原材料，包装材料以及生产过程中，不含有贵公司规定的相关禁止使用物质。

另，向贵公司报告成品、半成品中使用的原材料、包装材料以及生产工程中的添加剂成分如下所述：

RoHS 及其它环保物质填写

项次 Item	零件名称 Material Name	原料厂 Vendor	材质 Substance	重量(g) Weight	组成成份 Substance Composition	含百分比 (%)Substance Amount	化验报告 NO. Test Report No.	限用物质含量 (单位: PPM)											
								铅 (Pb)	镉 (Cd)	汞 (Hg)	六价铬 (Cr+6)	PBB	PBDE	SONY	PFOS	PFOA	PVC	卤素 (Cl、Br)	其它项目 Other substance
1.	导体	恒丰	镀银铜线	0.146	铜	8.74%	SHAEC25028332819	ND	ND	ND	ND	ND	ND	N/A	ND	N/A	N/A	N/A	
					银	0.15%													
2.	绝缘	巨化	FEP	0.246	FEP	14.98%	NGBPC26000015815 NGBPC26000015821	ND	ND	ND	ND	ND	ND	N/A	ND	ND	N/A	ND	
3.	编织	震雄	镀锡铜线	0.75	铜	45.21%	A2250642229101001	ND	ND	ND	ND	ND	ND	N/A	N/A	N/A	N/A	N/A	
					锡	0.46%													
4.	护套	巨化	FEP	0.45	FEP	24.36%	NGBPC26000015815 NGBPC26000015821	ND	ND	ND	ND	ND	ND	N/A	ND	ND	N/A	ND	
		见龙	FEP (黑色)	0.05	FEP	6.10%	A2250269592101001E	ND	ND	ND	ND	ND	ND	N/A	ND	ND	N/A	ND	

使用材料请贴图示于此栏，并标项次：



SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

- 1.1 Material Name: Flexible Copper-Clad Polyimide Laminates
1.2 Part Number: LPI-HF
1.3 Use of Material: Printed Circuit Boards
1.4 Date of Prepared: April 22nd, 2021
1.5 Company Identification: Jiu Jiang Flex Co., Ltd.
1210Qianjin Road (E) Jiujiang, Jiangxi, China 332006
1.6 Emergency Telephone Number: 86-792-8358899
1.7 Telephone Number for Information: 86-792-8358899, 8355813

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

Composition / substance		CAS#	%
PI	polyimide	25038-81-7	2.93~28.11
Adhesive	Epoxy resin	25036-25-3	2.42~6.81
	Flame Retardant (additive type)	225789-38-8	0.49~1.36
	Rubber	9003-18-3	1.45~3.99
Copper foil	Copper	7440-50-8	92.66~59.72

SECTION 3 HAZARDOUS IDENTIFICATION

Dust, soot, combustion gases produced when burning, of inhaled, ingested or absorbed through skin it will be harmful or irritating to the eyes, skin, mucous membrane, respiratory system, allergies can be caused to skin, flammable irritating and sensitive.

SECTION 4 FIRST-AID MEASURES (on Dust)**Inhalation:**

Remove to fresh air. Obtain medical attention if symptoms persist.

Eye Contact:

Flush immediately with large amounts of water. Do not rub eyes. Obtain medical attention if symptoms persist.

Skin Contact:

Wash area of contact thoroughly with soap and water. Do not rub or scratch. Obtain medical attention if symptoms persist.

Ingestion: Drinking water as much as possible, emetic, and see doctor.

SECTION 5 FIRE FIGHTING MEASURES

Extinguishing Agents

Following extinguishing media can be used:

Carbon dioxide extinguisher

Dry powder fire extinguisher

Water Pump

Foam fire extinguisher

Hazards of Unusual burning and Explosion:

The material produces carbon monoxide, carbon dioxide, nitrogen, oxides of nitrogen, smoke and dust when extremely high temperature or burning.

Personal Protective Equipment

As in any burning, wear self-contained breathing apparatus and full protective gear.

Upper limit of Flammability: not ascertained

SECTION 6 EMERGENCY HANDLING OF LEAKAGE

Emergency handling:

Block the leakage area to avoid dust flying and wear protective equipment, use vacuum cleaner to clean the leakage.

SECTION 7 HANDLING AND STORAGE

Handling: Wear cotton gloves to protect product damage and hand lacerated.

Storage conditions

The material should be stored in dry, ambient temperature wrapped with PE film.

Environment: Keep away from heat, ignition sources, and direct sunlight.

Other conditions: Keep cartons tightly closed when not in use.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory protection:

No general requirements. If the occurrence of dust, gas or smoke processing or processing, is stimulating to employees, to use NIOSH/MSHA approved respiratory protection measures. Engineering control should be excluded from the need for respiratory support.

Ventilation:

Once air exhaust exposure exceeds limits, or visible smoke, dust, exhaust gas, the ventilation at site should be accompanied by all the heat process at the same time.

Mechanical operations:

Optimize and follow good industrial operation as possible as you can.

Eye Contact:

With eye-glasses on during all process

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	PI film Copper-Clad Laminate with adhesive
Physical State:	solid
PH:	Not Applicable
Melting point:	no data
Relative density (water =1):	more than 1
Boiling point:	no data
The relative vapor density (air =1):	more than 1
Saturated vapor pressure (kPa):	Not Applicable
Heat of combustion (kJ/mol):	no data
The critical temperature (c):	Not Applicable
The critical pressure (MPa):	Not Applicable
The octanol / water partition coefficient of numerical:	Not Applicable
Flash point (°C):	Not Applicable
Upper explosive limit% (V/V):	Not Applicable
Ignition temperature (c):	no data
The lower limit of explosion% (V/V):	Not Applicable
Solubility:	insoluble
Application:	used for making printed circuit board

SECTION 10 STABILITY AND REACTIVITY

Stability:

Storage for one year at 5°C to 30°C and RH less than 75%

Conditions to Avoid:

High Humidity, direct sunlight,

The copper side may have violent reaction with followings:

Acetylene, ammonium nitrate, bromide, chlorate, iodic acid, chlorine, ClF_3 , $\text{Pb}(\text{N}_3)_2$, $(\text{Cl}_2+\text{OF}_2)$, ethylene oxide, fluoride, hydrogen peroxide, nitric acid hydrazide, hydrazoic acid, H_2S , K_2O_2 , NaN_3 , Na_2O_2 .

SECTION 11 TOXICOLOGICAL INFORMATION

Sensitization: Long time skin contact may cause dermatitis

Acute Poisoning: Inhalation of dust may cause thirst, fever, headache, weakness, symptom of respiratory disorders.

SECTION 12 ECOLOGICAL INFORMATION

Normal condition: No big influence may caused to ecology.

Waste Disposal Method

To dispose based on local, state or national laws.

Tank treatment: Not applicable.

SECTION 13 DISPOSAL CONSIDERATION

Hazardous wastage: NO.

Waste Disposal Method

To bury or burn at specified place based on national laws.

SECTION 14 TRANSPORTATION INFORMATION

No special regulation on this product for domestic or international transportation.

SECTION 15 REGULATORY INFORMATION

Must be complied with domestic or local regulation

SECTION 16 REGULATORY INFORMATION

14.1 INTERNATIONAL REGULATIONS:

EU Directive 2011/65/EU (RoHS): Compliant

SECTION 17 OTHER INFORMATION

Issued by: QC Department of Jiu Jiang Flex Co., Ltd

Disclaimer:

The data sheet information is true and accurate, but all statements and recommendations do not contain any guarantee. The consequence of the material shall be from practice. This report does not include all the circumstances that the user may encounter during operation. Each aspect of the operation may be increased or decreased during operation. All health and safety information contained in this report shall be submitted to you employees and customers. Users are responsible to take appropriate measures in practical operations.

Material Safety Data Sheet

ITEM : PSM-800@ /SMH-800

Identity (Trade Name As Used On Label)

SECTION 1 IDENTIFICATION

Manufacturer

UNIRES CHEMICAL INDUSTRIAL CO.,LTD.

Address

22CHING CHIAN 4thRD.KUANYIN INDUSTRIAL

DISTRICT TAOYUAN HSIEN TAIWAN

Phone Number (For Information)

886-3-4836651 (fax)886-3-4837487

Emergency Phone Number

Telex * **886-3-4836651**

MSDS Number* **20110701AAA**

CAS Number*

07/01/2011

Data Prepared

HUANG CHIN HUAI

Prepared By*

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS No.	CONTENTS(%)	OSHA (PEL)	ACGIH (TLV)
Heavy aromtic naphtha(petroleum)	64742-94-5	<12%	N.D.	N.D.
Epoxy-Acrylic derivative	Trade secret	<48%	N.D.	N.D.
Barium sulfate	7727-43-7	<20%	dust 15mg/m3	10mg/m3
Silica, amorphous, fused	7631-86-9	<8%	N.D.	dustTLV10mg/m3
Dipropylene glycol methyl ether	34590-94-8	<12%	100ppm	200ppm

SECTION 3 HAZARDS IDENTIFICATION

INHALATION : Highly concentrated vapor irritates nose, throat ant and lungs. May cause headache and dizziness.

EYE CONTACT : Slight irritation

SKIN CONTACT : Slight irritation

INGESTION : Harmful, if swallowed.

SECTION 4 FIRST AID MEASURES

SKIN CONTACT : Wash with plenty of water using a soap. Do not use organic solvents.

EYE CONTACT : Rinse immediately with clean water for at least 15 minutes. If irritation persists, seek medical attention

INHALATION : Immediately carry the victim to a place where fresh air is available. If irritation persists, treat with oxygen and seek medical attention.

INGESTION :obtain medical advice immediately. It is not recommended that vomiting be induced except on medical advice

SECTION 5	FIRE-FIGHTING MEASURES
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SUITABLE EXTINGUISHING MEDIA	: Carbon dioxide, foam, powder.
UNSUITABLE EXTINGUISHING MEDIA	: water spray and water jet.
EXPOSURE HAZARDS	: Burning may release oxides of carbon, nitrogen, sulfur and other toxic gases or vapors. Do not release chemically contaminated water into drains or surface waters, and soil according to local regulations.
PROTECTIVE EQUIPMENT	: Use full protective clothing and self-contained breathing apparatus.
FIR FIREFIGHTERS MEASURES	: promptly move transferable containers to another safety area .Check the speed of fire. Extinguish the fire with suitable extinguisher from the windward side

SECTION 6	ACCTDENTAL RELEASE MEASURES
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PERSONAL PRECAUTION	: Avoid ignition sources. Avoid contact with skin, eyes and clothing. Avoid inhaling vapor.
ENVIRINMENTAL PRECAUTIONS	: Prevent contamination of soil, drains and surface waters
METHODS FOR CLEANING	: Scoop up or absorb into combustible material, wipe out a stain in use organic solvents. Dispose in accordance with local regulations.

SECTION 7	HANDLING AND STORAGE
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HANDLTNG	: Handle with care. Avoid ignition sources. Ensure good ventilation and local exhaust. Do not smoke at the workplace
STORAGE	: Store in the original sealed container at less than 20°C.Avoid direct exposure to UV and sunlights.

SECTION 8	EXPOSURE CONTROLS/PERSINAL PROTECTION
------------------	--

People who know they are chemically sensitive, should avoid contact with this product.

TECHNICAL PROTECTIVE MEASURES	: No special safety measures required.
EXPOSURE CONTROL LIMITS	: (see PEL and TLV values shown in shown in section 2)
RESPIRATORY PROTECTION	: Wear suitable mask to avoid inhalation of vapor.
HAND PROTECTION	: wear chemical resistant gloves.
EYE PROTECTION	: wear safety glasses.
SKIN PROTECTION	: wear suitable protective working cloths.

SECTION 9	PHYSICAL AND CHEMICAL PROPERTIES
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BOILING	: *156°C(760mmHg)	COLOR	: black
FLASH	: 75.0°C	FORM	: Paste
VAPOR PRESSURE	: * 2.00mmHg(40°C)	VAPOR DENSITY	: *6.08(Air=1)
SOLUBILITY IN WATER	: * <10.7wt%	ODOR	: Mild odor
		SPECIFIC GRAVITY	: 1.18

*Data of the organic solvents or monomers contained in this product is product is quoted.

SECTION 10	STABILITY AND REACTIVITY
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STABILITY : Stable
CONDITIONS TO AVOID : Heat and sunlight.
MATERIALS TO AVOID : Strong acids, strong bases, peroxides and strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS : Burning may release oxides of carbon, nitrogen, sulfur and other toxic gases or vapors.

SECTION 11	TOXICOLGICAL INFORMATION
-------------------	---------------------------------

PRIMARY ROUTE(S) OF ENTRY
☒ DERMAL ☒ INHALATION ☐ INGESTION

TOXICITY STUDIES : Toxicity studies have not been carried out in this product. Toxicity information available for the ingredients listed in section 2 is given below.

HEALTH HAZARDS
ACUTE INGESTION TOXICITY : N.E.
ACUTE SKIN IRRITATION : Slightly irritant
MUTAGENICITY : NONE

CARCINOGENICITY
☐ NTP ☐ IARC ☐ OSHA ☒ NOT LISTED

SYMPTOMS OF OVER EXPOSURE
INHALATION : Slight irritation to respiratory tract. Highly concentrated vapor may cause headaches, and nausea.
EYES : Slight irritation
SKIN : Slight irritation
INGESTION : Expected to have a low order of toxicity.

SEVTION 12	ECOLOGICAL INFORMATION
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ACUTE FISH TOXICITY : Ecological data are not available
BIODEGRADABILTY : No data available.

SEVTION 13	DISPOSAL CONSIDERATIONS
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Incineration or landfill in accordance with local regulations.

SEVTION 14	TRANSPORT INFORMATION
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ADR : Inflammable liquid
IMDG-CODE : Free
IATA : Free
US DOT : Combustible liquid

UN : Free
FLASH POINT : 75.0°C

SECTION 15	REGULATORY INFORMATION
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EEC LABELING : Harmful

RISK PHRASES : Harmful : may cause lung damage if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SAFETY PHRASES : Avoid contact with skin.
: Do not breathe vapor.
: If swallowed, do not induce vomiting :seek medical advice immediately and show this container or label.
: Avoid release to the environment. Refer to special instructions/Safety data sheets.

SECTION 16	OTHER INFORMATION
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This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulation. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.

It may not be valid for this material, if used in combination with any other materials.

Material safety data sheet

Article and manufacturer informatio

Item name :KTM-150F WM
Ohter name: NONE
Recommended use: heat hardening printing ink
Name of manufacturer or supplier: supplier - keyway Technology Co., Ltd Manufacturer - kaiyao Technology Co., Ltd
Address of manufacturer or supplier: supplier - No.18, Lane 646, Boai street, Zhubei City, Xinzhu County Factory - No.18, Lane 646, Boai street, Zhubei City, Xinzhu County
Emergency contact: (03) 555-1822 Fax: (03) 553-1338

Hazard identification data

Hazard classification: flammable liquid, fire hazard Category 3, acute toxicity category 5.
Label content: flammable mixed solvent 
Symbols: warning:
Hazard warning message: flammable substances, may be harmful if inhaled.
Hazard prevention measures: tightly cover the container; keep away from the ignition source - no smoking; place the container in a well ventilated place; take off the clothes as soon as they are polluted; wear eye mask / face shield; do not eat or drink when using, and avoid release to the environment
Other hazards:

Component identification data

INGREDIENTS	% by Wt	CAS No.
Polyester resin (polymer)	20~25%	28064-14-4
Mixed solvent	20~25 %	106-65-0 ; 1119-40-0 ; 627-93-0
Titanium dioxide	30~35%	13463-67-7
Filler	10~15 %	14807-96-6
Hexamethylene diisocyanate refers to oligomer	5~10 %	21093-51-6
Butyl acetate	1~5 %	627-93-0

First aid measures

First aid methods of different exposure routes:
Inhalation:1. remove the patient to fresh air immediately. It can only cause nose irritation and may be harmful to people. Skin contact: 1. Immediately wash with water.
Eye contact: 1. Immediately open the eyelids and wash them with mild water.
Ingestion:
Most important symptoms:
Protection for first aid personnel: wear protective gloves to avoid contact with pollutants.
Tips for doctors:.

Fire fighting measures

Suitable extinguishing agent: dry powder

Special hazards that may be encountered during fire fighting:

Special fire fighting procedures: 1. Remove the container from the fire site and put out the fire in the upwind.

2. Stop leakage without endangering personnel safety.

3. If the leakage cannot be stopped and the surrounding area is empty, the fire will burn out.

Special protective equipment for firefighters: Firefighters must wear air breathing apparatus, fire clothing and protective gloves.

Leakage treatment method

Personal precautions: 1. Restrict personnel access until the overflow area is completely clean.

2. It is determined that the trained personnel are responsible for the cleaning work.

3. Wear appropriate personal protective equipment.

Environmental precautions:

1. Ventilate the area.

2. Extinguish or remove all sources of ignition.

3. Report to relevant units of safety, health and environmental protection of the government.

Cleaning method: 1. Do not touch the leakage. 2. Avoid discharging into sewer or other confined space. 3. Try to prevent or reduce the leakage under the condition of safety permission. 4. Use sand, soil or other absorbing substances that do not react with leakage substances to enclose the leakage. 5. In case of a small amount of leakage, absorb it with absorbent that will not react with the leakage. Contaminated absorbents and spills are equally hazardous and should be placed in properly capped and labeled containers. Flush the spill area with water. 6. In case of a large number of spills, contact the fire department, emergency treatment unit and supplier for assistance.

Safe handling and storage methods:

Without special measures, it is not inflammable and explosive.

Storage: no corrosive container, no reactivity, low flammability, non flammable.

Exposure precautions

Engineering control: local exhaust device or integral air exchange device.

Control parameters: eight hour daily average allowable concentration / short time

average allowable concentration / maximum allowable concentration:

Personal protective equipment: respiratory protection:

Hand protection: impervious gloves, butyl rubber recommended, Teflon, 4h, barricale, chemrel

Eye protection: 1. Goggles (minimum 8 inches). 2. splash proof safety goggles. 3. Do not wear contact lenses. Skin and body protection: chemical protective clothing.

Physical and chemical properties

Material state: viscous paste liquid shape: paste liquid

Color: smell: Fragrance

PH value: slightly acidic boiling point / melting point range: OC /---

Decomposition temperature: flash point not measured:

Test method: open cup and close cup

Autoignition temperature: explosion limit: LEL: uel:

Vapor pressure: vapor density: > 1 (air 1)/

Specific gravity: 1.2 ~ 1.4 (25 / 25 °C) for water solubility:

Stability and reactivity

Stability: under normal conditions
Possible hazardous reactions under special conditions:
Conditions to avoid:
Substances to be avoided: acids.
Hazardous decomposition:

Toxicity data

Exposure route: skin contact, eye contact, ingestion
Symptoms: eye damage
Acute toxicity: inhalation:
Skin: causes mild irritation. Eyes: cause mild irritation. Ingestion:
LD50 (test animal, absorption pathway) local effect:---
Sensitization:---
Chronic toxicity or long-term toxicity:
Special effect:.

Ecological data

Ecotoxicity:
Durability and degradability:
Bioaccumulation:
Mobility in soil:
Other adverse effects:

Waste disposal method

Waste disposal method:
1. Handle according to the current laws and regulations.
Consider sanitary burying or burning in a qualified solvent burning tower.

Delivery information

UN No:
UN transport Name:
Transportation hazard classification:
Packing category:
Marine pollutants (yes / no):
Special delivery methods and precautions:-

Other information

References: None
Prepared by: kaiyao Technology Co., Ltd. / No.18, Lane 646, Boai street, Zhubei City, Xinzhu County/ Tel:03-5551822 / Fax:03-5531338
Prepared by: Xie Jinquan
Prepared on: August 15, 2014
Note: the above information and data are for reference only. The user shall determine the feasibility of the application according to the application requirements.

MATERIAL SAFETY DATA SHEET

产 品 安 全 资 料

Section1 Preparation Identification and Company 样品标公司

Preparation Identification 标记: 防氧化原液DX-808HT

Manufacturers Name 公司名称: 深圳市东方星化工科技有限公司

Manufacturers Address 地址: 东莞市虎门镇大宁村大板地工业区

Emergency Telephone Number 联系电话: 0769-85015502

Emergency Tex Number 传真: 0769-85015500

Postal code 邮政编码: 523900

Section 2 Composition information on Ingredients

成份组成

学名

化学文摘社登记号码

浓度(%)

(Chemical Name)

(CASNO)

(Concentration)

苯并咪唑 Benzimidazole

95-14-7

1%

甲酸 Formic acid

64-18-6

3%

添加剂 Additives

0.05%

DI 水DI water

7732-18-5

95.95%

Section 3 Hazards Identification

危险性概述

Safety and Risk 安全和危险性: DX-808HT contain formic acid which may cause severe burns. 含有甲酸可能导致灼伤

Section 4 First Aid Measures

急救措施

Eyes 眼睛: flush with plenty of clean, cool water for 15 minutes and get immediate medical attention 大量清水冲洗并尽快就医

Skin 皮肤: flush with plenty of clean, cool water for 15 minutes 大量清水冲洗15 分钟

Ingestion 食入: get immediate medical attention 尽快就医

Section 5 Fire Fighting Measures

消防措施

不可燃

Section 6 Accidental Release Measures

泄漏应急措施

Personal Precautions 个人防护: wears protective clothing, chemical safety goggles, respirator, face shield and rubber gloves 穿戴耐酸防护服, 护目镜、面罩和橡胶手套

Clean-up Procedure 清洗: flush with plenty of clean, cool water 用大量清水冲洗

Section 7 Handling and Storage

操作与储存

Ventilation 通风: Store indoors in a cool dry area

阴凉干燥处

Temperature 温度: Store indoors in a cool dry area

阴凉干燥处

Containers 容器: Keep containers tightly closed. Loosen closure cautiously when opening. 保持容器密封, 打开时慎重

Incompatible Materials 不相容物质: alkalis and oxidizers 碱性和氧化物

Pot Life 有效期: six months 6 个月

Section8 Exposure Controls /Personal Protection 接触控制与个人防护

Ventilation 通风: Exhaust ventilation is recommended 推荐抽出式通风

Respiration 呼吸: respirator。Avoid breathing vapors or mist。防毒面具
避免吸入蒸汽或烟雾

Eyes and Face 眼睛和脸: chemical safety goggles and face shield 护目镜
和脸罩

Hands and Skin 手和皮肤: rubber gloves 橡胶手套

Clothing : protective clothing 耐酸防护服

Section 9 Physical and Chemical Properties 物理和化学特性

Appearance 外观: 浅蓝色液体

Odour 气味: 淡醋酸味

PH: 2.7±0.3

Section 10: Stability and Reactivity 稳定性和反应活性

Chemical Stability 化学稳定性: 弱的反应能力

Incompatible Materials 不相容物质: alkalis and oxidizers 碱性和氧化物

Section 11 Toxicological Information 毒性资料

NDA 无毒

Section 12 Disposal Consideration 废弃处理

Dispose of material in approved sites 中和后过滤排放，过滤物交当地合法
批准单位。

Section 13 生态资料

生态毒性: 无

生物降解性: 无

非生物降解性: 无

其它有害作用: 无

Section 14 法规信息

通用法规:

劳工安全卫生规则

特定化学物预防标准

Section 15 运送资料

国内运输规定: 依道路交通安全规则第84 条

Section 16 其他资料

制表单位: 深圳市东方星化工科技有限公司

制表地址: 东莞市虎门镇大宁村大板地工业区

制表部门: 品质部

制表日期: 2017 年 1 月



Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ 200MP Adhesive Transfer Tapes 467MC, 467MCF, 467MP, 467MPF, 468MC, 468MCF, 468MP, 468MPF, 7952MP, 7955MP, 7962MP, 7965MP, 9172MP, 9185MP, 9667MP, 9668MP, 9668MPL

MANUFACTURER: 3M

DIVISION: Industrial Adhesives and Tapes Division

ADDRESS: 3M Center, St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 03/27/13

Supersedes Date: 02/10/12

Document Group: 27-4234-4

Product Use:

Specific Use: Bonding & Attachment
Intended Use: Industrial use

SECTION 2: INGREDIENTS

Ingredient

Disposable Paper or Film Liner
Acrylate Polymer

C.A.S. No.

Mixture
Trade Secret

% by Wt

Not Applicable
100

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Roll of Tape

Odor, Color, Grade: Translucent adhesive, slight acrylate odor, paper or film quick release liner

General Physical Form: Solid

Immediate health, physical, and environmental hazards: This product, when used under reasonable conditions and in accordance with the 3M directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

No health effects are expected.

Skin Contact:

No health effects are expected.

Inhalation:

This product may have a characteristic odor; however, no adverse health effects are anticipated.

Ingestion:

No health effects are expected.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: No need for first aid is anticipated.

Skin Contact: No need for first aid is anticipated.

Inhalation: No need for first aid is anticipated.

If Swallowed: No need for first aid is anticipated.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>

5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: No unusual fire or explosion hazards are anticipated.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Not applicable.

6.2. Environmental precautions

Not applicable. Reclaim undamaged product.

Clean-up methods

Not applicable. Collect as much of the spilled material as possible.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

7.2 STORAGE

Not applicable.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Not applicable.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact.

8.2.2 Skin Protection

Avoid prolonged or repeated skin contact. Gloves not normally required.

8.2.3 Respiratory Protection

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

8.2.4 Prevention of Swallowing

Not an expected route of exposure.

8.3 EXPOSURE GUIDELINES

None Established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Roll of Tape
Odor, Color, Grade:	Translucent adhesive, slight acrylate odor, paper or film quick release liner
General Physical Form:	Solid
Autoignition temperature	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Boiling Point	<i>Not Applicable</i>
Density	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Specific Gravity	<i>Not Applicable</i>
pH	<i>Not Applicable</i>
Melting point	<i>No Data Available</i>
Solubility in Water	Nil
Evaporation rate	<i>Not Applicable</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	<i>Not Applicable</i>
VOC Less H2O & Exempt Solvents	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:

10.1 Conditions to avoid

None known

10.2 Materials to avoid

None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance

Hydrocarbons
Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion
During Combustion

Hazardous Decomposition: Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products may occur as a result of oxidation, heating, or reaction with another material.

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Reclaim if feasible. If product can't be reclaimed, dispose of waste product in a sanitary landfill. Alternatively, incinerate the waste product in an industrial, commercial, or municipal incinerator.

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

Not regulated per U.S. DOT, IATA or IMO.

*These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M transportation classifications are based on product formulation, packaging, 3M policies and 3M understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and **not the packaging, labeling, or marking requirements**. The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.*

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - No Delayed Hazard - No

STATE REGULATIONS

Contact 3M for more information.

CHEMICAL INVENTORIES

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 0 **Flammability:** 1 **Reactivity:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Reason for Reissue: The MSDS has been revised because 3M has adopted the 16-section ANSI/ISO format. The potential hazards of the product have not changed. We encourage you to reread the MSDS and review the information.

Revision Changes:

Section 1: Product name was modified.

Page Heading: Product name was modified.

Copyright was modified.

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