SKYPATH PRODUCTS:

RADAR ABSORBING MATERIALS AND THE "UAV-RADAR-ABSORBING STEALTH" COMBINATION

PRODUCT INSTRUCTIONS

SKYPATH

RADAR ABSORBING AGENT PRODUCT INSTRUCTIONS

I. PRODUCT OVERVIEW

Radar absorbing agents are widely used in radar absorbing coatings, stealth materials, electromagnetic shielding materials, and other fields. They are integral to ground military facilities, aircraft, missiles, ships, wind turbine blades, microwave anechoic chambers, absorbing patches, electronic communication devices, and other composite products requiring stealth, camouflage, or shielding capabilities.

The Tian Dun Chuangcai® XBJ Series Radar Absorbing Agent is developed through advanced surface modification techniques and precise microstructure control, incorporating specially selected and modified raw materials. This ensures exceptional absorbing performance and corrosion resistance. Compared to traditional radar absorbing agents, our corrosion-resistant variant overcomes limitations such as narrow absorption bandwidth, poor corrosion resistance, and incompatible material properties. By synergizing absorbing and corrosion-resistant functionalities while emphasizing lightweight and stability, we provide superior, comprehensive solutions for diverse industries, enhancing customer competitiveness in the market.

II. PHYSICAL AND CHEMICAL PROPERTIES

1.Appearance: Black-gray powder with uniform particle distribution.

2.Apparent Density (g/cm^3) : 0.5–2.0 (varies by grade).

III. PRODUCT FEATURES AND APPLICATIONS

Key Features:

◎ High-Efficiency Absorption: Breaks traditional frequency limitations, effectively absorbing multi-band radar waves (including low-frequency ground surveillance radar and high-frequency fire-control radar). Customizable solutions tailored to complex electromagnetic environments.

◎ Superior Corrosion Resistance: Engineered chemical composition and microstructure form a stable, dense protective film under harsh conditions (humidity, salt spray, acids/bases). Maintains performance and physical integrity in extreme temperatures and corrosive environments, extending service life.

◎ Excellent Compatibility: Seamlessly integrates with common coating resins, allowing flexible formulation adjustments for diverse application scenarios.

◎ Stable Performance: The new manufacturing process has greatly improved the quality stability of the radar absorbing agents for large-scale production.

Primary Applications:

1.Aerospace: Fuselage, wings, radar domes—reducing radar cross-section and resisting high-altitude corrosion for prolonged operational stability.

2.Marine Industry: Hulls, masts, radar antennas—minimizing detection risk and combating marine corrosion (salt spray/humidity).

3.Electronic Communication Equipment: Enclosures, antenna radomes—shielding against electromagnetic interference and outdoor corrosion.

IV. CORE TECHNOLOGIES

1.Surface Modification of Radar Absorbing Agents

2.Electroless Plating Technology Control

V. TECHNICAL SPECIFICATIONS

Product Grade	XBJ-012D	XBJ-011Z	XBJ-011G	XBJ-013Z
Apparent Density (g/cm^3)	0.5-0.7	0.8-1.0	1.6-1.9	0.6-0.7
Particle Size D50 (μm)	~27	~10	~4.5	22.5-24.6
Absorption Frequency (GHz)	2-4	6-10	9-18	4-10
Reflection Loss at 1.5 mm (dB)	⩽ 4	⩽ -10	⩽ -10	⩽ -6

Note: Parameters are for reference only; consult technical agreements for specifics.

VI. SAFETY INSTRUCTIONS

1.Toxicity: Prolonged inhalation of dust/VOCs may cause respiratory irritation, coughing, dyspnea, or nerve damage. Avoid dust/VOC exposure during handling.

2.Chemical Hazards: Reacts violently with reducers, organic substances, flammables (e.g., sulfur, phosphorus, metal powders). Isolate from incompatible chemicals during storage/transport.

3.Emergency Response:

◎ Inhalation: Move to fresh air; ensure clear airways.

◎ Skin Contact: Rinse with copious water.

◎ Eye Contact: Flush with water/saline; seek medical attention.

◎ Ingestion: Rinse mouth with water; induce vomiting if advised.

VII. IMPORTANT NOTICE

1.Storage: Keep containers sealed in cool, well-ventilated dedicated warehouses, away from heat/flame sources.

2.Usage: Follow strict protocols to avoid friction/sparks. Control dosage and reaction conditions per application requirements.

3.Personal Protection: Wear masks, goggles, gloves, and work in well-ventilated areas. Promptly remove contaminated clothing and seek medical help for skin/eye exposure or inhalation.

VIII. PACKAGING AND TRANSPORTATION

1. Packaging: 1 kg, 5 kg, 10 kg bags (customizable). 2. Storage: Store in dry conditions as a powder.

3. Transport: Prevent contamination by isolating from other materials.

IX. AFTER-SALES SERVICE

1. Warranty: 3-month warranty from purchase date.

2. Contact: Tel: 15249040066.

3. Services: Free replacement for defective products; technical support and usage guidance.

Notes:

1. Prices are inclusive of taxes and shipping fees.
2. Custom packaging options are available upon request.
3. Minimum order quantity (MOQ): 10 kg per model.
4. Payment terms: T/T in advance.
5. Lead time: 15-20 business days after order confirmation.

PRODUCT INSTRUCTIONS

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PRODUCT INSTRUCTIONS

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RADAR ABSORBING COATING PRODUCT INSTRUCTIONS

I. PRODUCT OVERVIEW

Radar absorbing coatings enable microwave stealth for equipment without altering its external shape. The Tian Dun Chuangcai® XC Series Radar-Absorbing Coatings leverage cutting-edge surface modification technology and optimized resin matrix formulations to achieve continuous, stable production. These coatings feature broad absorption bandwidth, lightweight construction, strong adhesion, and exceptional temperature and corrosion resistance, positioning them as a competitive solution in the market.

II. PHYSICAL AND CHEMICAL PROPERTIES

1.Appearance: Uniform black-gray liquid.
2.Solids Content: High solids content of 50–70 wt%, guaranteeing consistent performance.

III. PRODUCT FEATURES AND APPLICATIONS

Key Features:
◎ Broadband Absorption: Covers multi-frequency bands (2~18 GHz), addressing complex electromagnetic environments.
◎ Temperature/Corrosion Resistance: Maintains performance under extreme heat, humidity, and salt spray exposure.
◎ Ultra-Thin Coating: Achieves effective absorption with reduced thickness (0.40–0.60 mm), minimizing weight and space requirements..
◎ Customizable Solutions: Tailored to meet specific frequency, thickness, and environmental demands.
Applications:
1.Aerospace: Stealth enhancement for aircraft and radar domes.
2.Marine Industry: Radar cross-section reduction for vessels and offshore platforms.
3.Electronics/Telecom: Suppressing EMI in communication base stations and enclosures.

IV. CORE TECHNOLOGIES

1.Advanced radar-absorbing agent surface modification.
2.Optimized coating formulation and process control.
3.Customized one-stop spraying solutions.

V. TECHNICAL SPECIFICATIONS

Property	Specification		Test Condition
	XBTC-200	XBTC-300	
Appearance	Black-gray liquid	Black-gray liquid	Visual inspection
Solid Content (wt%)	50-70	50-70	Standard drying method
Thickness (mm)	0.40±0.05/ 0.60±0.05	0.40±0.05/ 0.60±0.05	Adjustable based on requirements
Adhesion (MPa)	⩾ 10(0.4mm) ⩾ 8(0.6mm)	⩾ 10(0.4mm) ⩾ 8(0.6mm)	Cross-cut tape test
Impact Resistance (cm)	⩾ 50	⩾ 50	500 g weight drop test
Radar Reflectivity (dB)	⩽ -3.0(8-12 GHz) ⩽ -3.5(2-6 GHz)	⩽ -3.0(8-12 GHz) ⩽ -3.5(2-6 GHz)	ASTM D4935 standard
Thermal Stability	No blistering/cracking after 200° C/100h	No blistering/cracking after 300° C/100h	Oven aging test
Salt Spray Resistance	No corrosion after 2000h	No corrosion after 2000h	ASTM B117 standard

Note: Parameters are for reference only; consult technical agreements for specifics.

VI. SAFETY INSTRUCTIONS

1.Toxicity: Prolonged exposure to VOCs or dust may cause respiratory irritation or neurological symptoms. Use in well-ventilated areas.
2.Chemical Reactivity: Avoid contact with reducing agents, flammable materials (e.g., sulfur, metals), or organic solvents. Store separately.
3.Emergency Response:
◎ Inhalation: Move to fresh air; ensure clear airways.
◎ Skin/Eye Contact: Rinse with water for ⩾ 15 minutes; consult a physician.
◎ Ingestion: Do not induce vomiting; seek immediate medical care.

VII. IMPORTANT NOTICE

1. Storage: Keep containers sealed in cool, well-ventilated dedicated warehouses, away from heat/flame sources.
2. Usage: Follow strict protocols to avoid friction/sparks. Control dosage and reaction conditions per application requirements.
3. Personal Protection: Wear masks, goggles, gloves, and work in well-ventilated areas. Promptly remove contaminated clothing and seek medical help for skin/eye exposure or inhalation.

VIII. PACKAGING AND TRANSPORTATION

1. Packaging: 1 kg, 5 kg, 10 kg plastic containers (custom sizes available).
2. Storage: Ensure containers are sealed and protected from contamination.

IX. AFTER-SALES SERVICE

1. Warranty: 3-month warranty from purchase date.
2. Contact: Tel: 15249040066.
3. Services: Free replacement for defective products; technical support and usage guidance.

Notes:
1. Prices are inclusive of taxes and shipping fees.
2. Custom packaging options are available upon request.
3. Minimum order quantity (MOQ): 10 kg per model.
4. Payment terms: T/T in advance.
5. Lead time: 15-20 business days after order confirmation.

For bulk orders or further inquiries, please contact:
Tel: +86 152 4904 0066

This quotation is valid for 30 days from the date of issuance.

PRODUCT INSTRUCTIONS

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TDZHY260 无人机

TDZHY260 drone

无人机特种技术重点实验室
Science and Technology on UAV Laboratory

RCS 检测报告

TEST REPORT

报 告 编 号：
Report No.

被检测件名称：垂直起降固定翼无人机
Name of EUT

被检测件型号：智绘鹰 S260
Model of EUT

被检测件编号：S100
Number of EUT

委 托 单 位：SKYPATH UAV PTE. LTD.
Customer

签 发 日 期：2025 年 3 月 10 日
Issuing Date

编 写：陈卫星 校 核：
Compiled by Checked by

批 准： 职 务：
Authorized by Title

检测单位（盖章）：无人机特种技术重点实验室
Organization of Test (Seal)

声明：
Manifesto:
1、本实验室仅对加盖本实验室测试章的完整检测报告原件负责；
We are only responsible for the complete Test Report in original version with our Laboratory.
2、检测报告无编写、校核、批准人签字无效；
This Test Report is not valid unless signed by compiler, reviser and approver.
3、检测报告出具的检测结果仅对客户此次所送样品测试期间的状态负责。
The validity of the test result relate only to the condition during test of the sample(s) send by customer.
4、未经本实验室同意，不得复制（全文复制除外）检测报告。
It is not valid for partly copying this report content unless allowed by laboratory.
5、对本测试报告如有异议，请于报告签发日期起三个月内向本实验室提出，逾期视为认可本检测结果。
With disagreement for this report please notify us in 3 months, otherwise the test results are approbated.
6、地址：西安市沣惠南路 34 号（邮编：710065） 电话：88451013 传真：88451043
Address: 34# FengHui South Road, Xi'an, Shaanxi (ID: 710065) Fax: 88451043

11 测试效果

图 2 吸波材料喷涂前无人机实拍照片

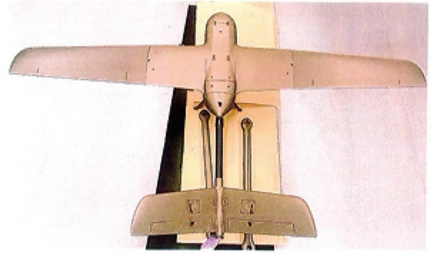

图 3 吸波材料喷涂后无人机实拍照片

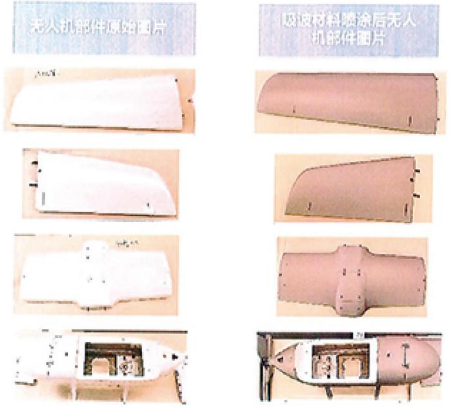

图 4 吸波材料喷涂前后无人机部件实拍照片对比

13 检测结论

序号	频率	雷达散射截面积 RCS 值	涂层前	涂层后	RCS 下降值	RCS 下降率
1	10G	水平极化 RCS	0.082806	0.043831	0.038975	47%
2	10G	垂直极化 RCS	0.070833	0.04493	0.025903	37%
3	15G	水平极化 RCS	0.051884	0.037078	0.014806	29%
4	15G	垂直极化 RCS	0.071534	0.031587	0.039947	56%
平均值						42%

如上表所示，通过对被检测垂直起降固定翼无人机涂层前后 X、Ku 波段 RCS（雷达散射截面积）进行检测对比，结果显示：被检测无人机在 X 和 Ku 波段的 RCS 值最低减少 0.0148，最高减少值 0.039947，RCS 最低下降率 29%，最高下降率 56%，平均下降率 42%， 表明该涂层材料能够显著的减少无人机在 X 和 Ku 波段的 RCS 值，具有明显的吸波隐身效果。

技术专利

Technical patents

专 利 申 请 受 理 通 知 书

根据专利法第 28 条及其实施细则第 43 条、第 44 条的规定，申请人提出的专利申请已由国家知识产权局受理。现将确定的申请号、申请日等信息通知如下：
申请号：2025209290624
申请日：2025 年 05 月 13 日
申请人：SKYPATH UAV PTE. LTD.
发明人：罗湄涛
发明创造名称：一种耐高温的吸波涂层
经核实，国家知识产权局确认收到文件如下：
权利要求书 1 份 1 页,权利要求项数 ： 8 项
说明书 1 份 4 页
说明书附图 1 份 1 页
说明书摘要 1 份 1 页
专利代理委托书 1 份 2 页
实用新型专利请求书 1 份 4 页
申请方案卷号：0SC1250513885

提示：
1.申请人收到专利申请受理通知书之后，认为其记载的内容与申请人所提交的相应内容不一致时，可以向国家知识产权局请求更正。
2.申请人收到专利申请受理通知书之后，再向国家知识产权局办理各种手续时，均应当准确、清晰地写明申请号。

审 查 员：自动受理
联系电话：010-62356655
审查部门：初审及流程管理部

一种耐高温的吸波涂层

专 利 申 请 受 理 通 知 书

根据专利法第 28 条及其实施细则第 43 条、第 44 条的规定，申请人提出的专利申请已由国家知识产权局受理。现将确定的申请号、申请日等信息通知如下：
申请号：2025209440975
申请日：2025 年 05 月 14 日
申请人：SKYPATH UAV PTE. LTD.
发明人：罗湄涛
发明创造名称：一种吸波涂层的喷涂装置
经核实，国家知识产权局确认收到文件如下：
权利要求书 1 份 2 页,权利要求项数 ： 6 项
说明书 1 份 6 页
说明书附图 1 份 2 页
说明书摘要 1 份 1 页
专利代理委托书 1 份 2 页
实用新型专利请求书 1 份 4 页
申请方案卷号：0SC1250514241

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2.申请人收到专利申请受理通知书之后，再向国家知识产权局办理各种手续时，均应当准确、清晰地写明申请号。

审 查 员：自动受理
联系电话：010-62356655
审查部门：初审及流程管理部

一种吸波涂层的喷涂装置

专 利 申 请 受 理 通 知 书

根据专利法第 28 条及其实施细则第 43 条、第 44 条的规定，申请人提出的专利申请已由国家知识产权局受理。现将确定的申请号、申请日等信息通知如下：
申请号：2025209440994
申请日：2025 年 05 月 14 日
申请人：SKYPATH UAV PTE. LTD.
发明人：罗湄涛
发明创造名称：一种用于搅拌吸波复合材料的搅拌设备
经核实，国家知识产权局确认收到文件如下：
权利要求书 1 份 2 页,权利要求项数 ： 6 项
说明书 1 份 5 页
说明书附图 1 份 2 页
说明书摘要 1 份 1 页
专利代理委托书 1 份 2 页
实用新型专利请求书 1 份 4 页
申请方案卷号：0SC1250514023

提示：
1.申请人收到专利申请受理通知书之后，认为其记载的内容与申请人所提交的相应内容不一致时，可以向国家知识产权局请求更正。
2.申请人收到专利申请受理通知书之后，再向国家知识产权局办理各种手续时，均应当准确、清晰地写明申请号。

审 查 员：自动受理
联系电话：010-62356655
审查部门：初审及流程管理部

一种用于搅拌吸波复合材料的搅拌设备

PRODUCT
PATENT

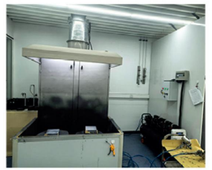
PRODUCTION EQUIPMEN

SKYPATH

生产设备
Production equipment






PRODUCTION EQUIPMEN

GET IN TOUCH

Let’s discuss your operational requirements, timeline, and budget.

EMAIL: info@skypathuav.com

WEBSITE: www.skypathuav.com

FOLLOW US

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