



TECHNOLOGY MAKES LIFE BETTER

安徽省蚌埠市高新区兴中路 985 号  
日月科技园

电话: 86-552-3827158

传真: 86-552-3822922

安徽艾约塔硅油有限公司

**IOTA CORPORATION LTD.**

Sunmoon industry park, 985 Xingzhong Road,  
Bengbu, China 233000

Tel: 86-552-3827158

Fax: 86-552-3822922

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## **TDS of Organic polyborosilazane IOTA 9120**

### **Organic polyborosilazane(Potteryable precursor polymer) IOTA 9120**

#### **Product description**

IOTA 9120 is a liquid precursor polymer consisting of repeating Si-N units、 Si-N-B units. It can be used as a thermosetting resin and a ceramic precurs. Under relatively mild conditions, the SiBCN ceramic products with excellent temperature resistance are obtained, especially for high temperature resistant adhesives.

IOTA 9120 can be cross-linked under the temperature of 120-180 ° C, curing can be done in air or inert atmosphere.

IOTA 9120 can also do hydrosilylation reaction by platinum catalyst , curing at 80-100 °C. The curing time depends on the curing temperature and the amount of catalyst, usually 2-5h.

First, IOTA 9120 cured product converted to amorphous ceramics by high temperature cracking, eventually get crystalline ceramics. It is amorphous product below 1600 °C, begin to crystallize above 1600 °C. Ceramic product composition has great relation with cracking atmosphere, SiC and Si<sub>3</sub>N<sub>4</sub> under nitrogen or argon; mainly Si<sub>3</sub>N<sub>4</sub> under Ammonia; mainly SiBOCN under air conditions. In addition, the cured product cracking is easily influenced by filler, and result affects the composition of the final ceramic product.

IOTA 9120 can be diluted with various polar or non-polar dry solvents. It is sensitive to water, alcohol solvents, hydrolysis or alcoholysis reaction, to make the product deteriorate. And it should avoid contact with acid, alkali and other proton type substances.

#### **Product features**

Low viscosity

Short curing time

Various curing methods

High ceramic yield

Good adhesion on the metal \ ceramic \ graphite materials

ADD: Sunmoon industry park, 985 Xingzhong Road, Bengbu, China 233000

Tel: 86-552-3827158; Fax: 86-552-3822922 Website: [www.polysilazane.cn](http://www.polysilazane.cn)



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Easy to prepare SiBCN ceramics

**Technical Parameters:**

Apparent features:	light yellow liquid
Solid content %:	100% liquid
Molecular weight (Mn):	700-900
Viscosity:	10000-20000 cp
VOC (%) :	N/A
Cured ceramic production (800°C) :	>55%
Ceramic density :	1.70-2.00 g/cm <sup>-3</sup>

**Applications:**

Ceramic matrix composites (CMCs)  
Metal matrix composites  
High temperature resistant adhesive  
Anticorrosive coating  
High temperature resistant anti-oxidation ceramic coating  
Ceramic preform impregnated  
Thermosetting resin  
Organic and inorganic hybrid materials

**Packaging:**

Upon customer demand, it is packed in 0.5-20 liters in plastic drum, solid content is 100%.

**Clean:**

Proper cleaning method is important. After use, take acetone or solvent oil immediately to wipe the tool and clean. Once IOTA 9120 cured, the solvent cannot wash it away.

**Shelf life:**

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Shelf life of unopened **polyborosilazane** IOTA 9120 is one year;  
opened **polyborosilazane** shelf life is depending on protection measures. Under sealed low  
temperature drying condition, the life time is more than two months.

**Precautions:**

When use **polyborosilazane**, it should be in a ventilated, dry environment and with the  
necessary protective measures such as gloves, masks, goggles; We shouldn't put the  
uncured IOTA 9120 near fire, humid air and water.

For details, please contact,

**IOTA CORPORATION LTD.**

Add: Sunmoon industry park, 985 Xingzhong Road, Bengbu, China 233000

Whatsapp/Wechat: 0086-18055207372

QQ: 3374697933

Email: [sales05@siliconeoil.net](mailto:sales05@siliconeoil.net)

Website: [www.polysilazane.cn](http://www.polysilazane.cn)

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