



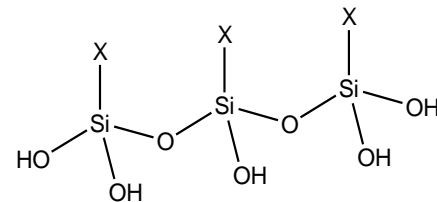
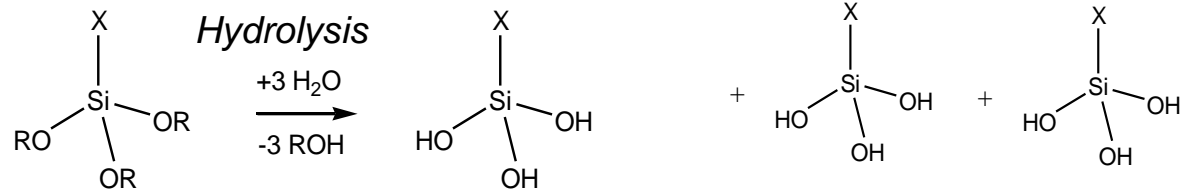
A Subsidiary of PETRONAS Chemicals Group

Silicones & Silanes for sealant compounding

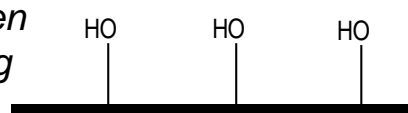
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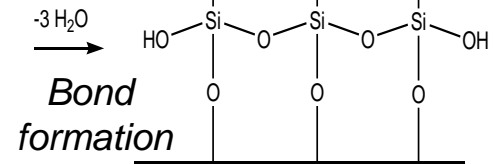
Chemistry of Silane Bonding to Inorganic Substrates



Hydrogen bonding



substrate



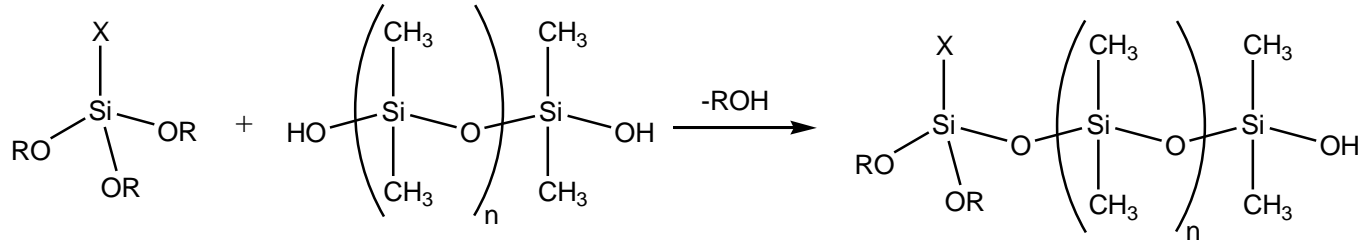
Bond formation

substrate

OR =alkoxy
 acetoxy
 oxime
 acetone

X = organofunctional
 group
 e.g. -vinyl, -
 phenyl,
 -glycidoxy, -
 methacryloxy,
 -alkyl, -amine

Chemistry of Silanes in RTV-1 Crosslinkers



-OR	By-product	Advantages	Disadvantages
Oxime Mos/Vos	Methylethylketoxime	Good adhesion to plastics Low corrosive	H&S issues Low exposure levels
Acetoxy MTAS ETAS	Acetic acid	Good adhesion Stable up to 300 °C Fast cure	Corrosive Pungent odor
Alkoxy	Alcohol	Good adhesion Non-corrosive	Slow cure Only stable up to 220 °C

BRB Products for RTV-1 Sealant Production

- 1. Acetoxy Sealants**
- 2. Alkoxy Sealants**
- 3. Oxime Sealants**
- 4. MS-Polymer Sealants**

1. Acetoxy sealants

A: 100% Silicone Sealant General purpose

BRB OH Fluid 80,000 cSt → 60-80%

BRB Silicone Oil 1,000 cSt → 10 – 20%

BRB Silanil[®] MTAS → 5 – 10%

BRB DBTDL → 0.2 -1%

Third party fumed Silica → 10%

Optional adhesion Promoter: BRB Silanil BDAC

1. Acetoxy sealants

B: Extended Silicone Sealant General purpose

BRB OH Fluid 80,000 cSt → 40-60%

Third party solvent plasticizer → 20 – 40%

BRB Silanil[®] MTAS → 5 – 10%

BRB DBTDL → 0.2 -1%

Third party fumed Silica → 10%

Optional adhesion Promoter: BRB Silanil BDAC

2. Alkoxy Sealants

- BRB OH Fluid 20,000 cSt and 80,000 cSt
- BRB Silicone Oil 500 cSt
- Third party coated calcium carbonate
- BRB Silanil[®] 118

Optional adhesion promoter: BRB Silanil[®] 919

3. Oxime Sealants

Neutral cure all Weather Purpose

BRB OH Fluid 80,000 cSt → 30 -40%

BRB Silicone Oil 100 cSt → 5-10%

Third party coated calcium carbonate → 40-50%

BRB Silanil[®] MOS and VOS → 3-4%

BRB DBTDL → 0.2 – 1.0%

Optional adhesion promoter: BRB Silanil[®] 919

4. MS-Polymer

X-linker and adhesion promoter for MS-Polymer

- BRB Silanil[®] 118

Optional adhesion Promoter: BRB Silanil[®] 138, BRB Silanil[®] 276

What BRB offers

- 1. Full range of siloxane and silane products**
- 2. Formulation help**
- 3. Only raw material supplier, not competing with sealants in the market**
- 4. Flexible supply from regional warehouse**
- 5. Competitive prices for continuous sustainable growth**



BRB

Passionate about Progress