

Silicones for Construction Industry..... A boon.

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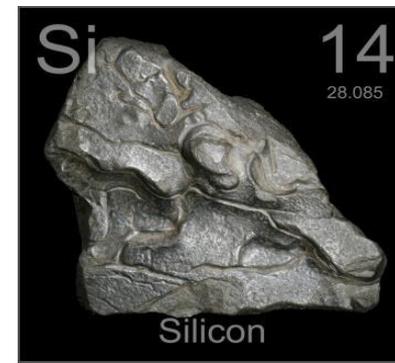
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Introduction of silicones

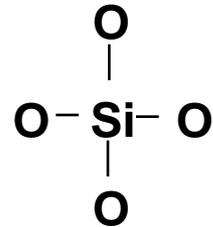
- **Discovered** : 1823, by Jons Berzelius.
- **Name Origin** : From the Latin word *silex* (flint)
- **Uses**: Construction, Glass, Semiconductors, Aviation & Aerospace, Electronics, Healthcare, Household, Paints & Coating, Paper & Film, Personal Care, Restoration, Rubber, Sealant & Adhesive, Textiles, Leather, Automobile, Fertilizers, Oil & Gas, Chemical Process..... etc.
- **Obtained From**: The 2nd most abundant element, 25.7% of the earth crust, widely found in a compound form (SiO₂)

Silicone Nomenclature

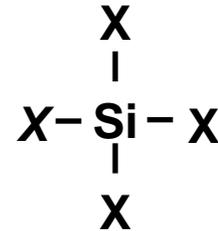
SILICON

Si

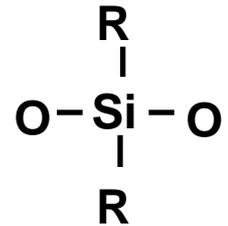
SILICA



SILANES



SILOXANES



APPLICATIONS

Aerospace

Automotive

Chemicals/ Petrochemicals

Construction

Consumer Products

Electrical/Electronics

Food Processing

Industrial Maintenance Production

Medical Products

Paints & Coatings

Personal, Household & Automotive Care

Pharmaceuticals

Plastics

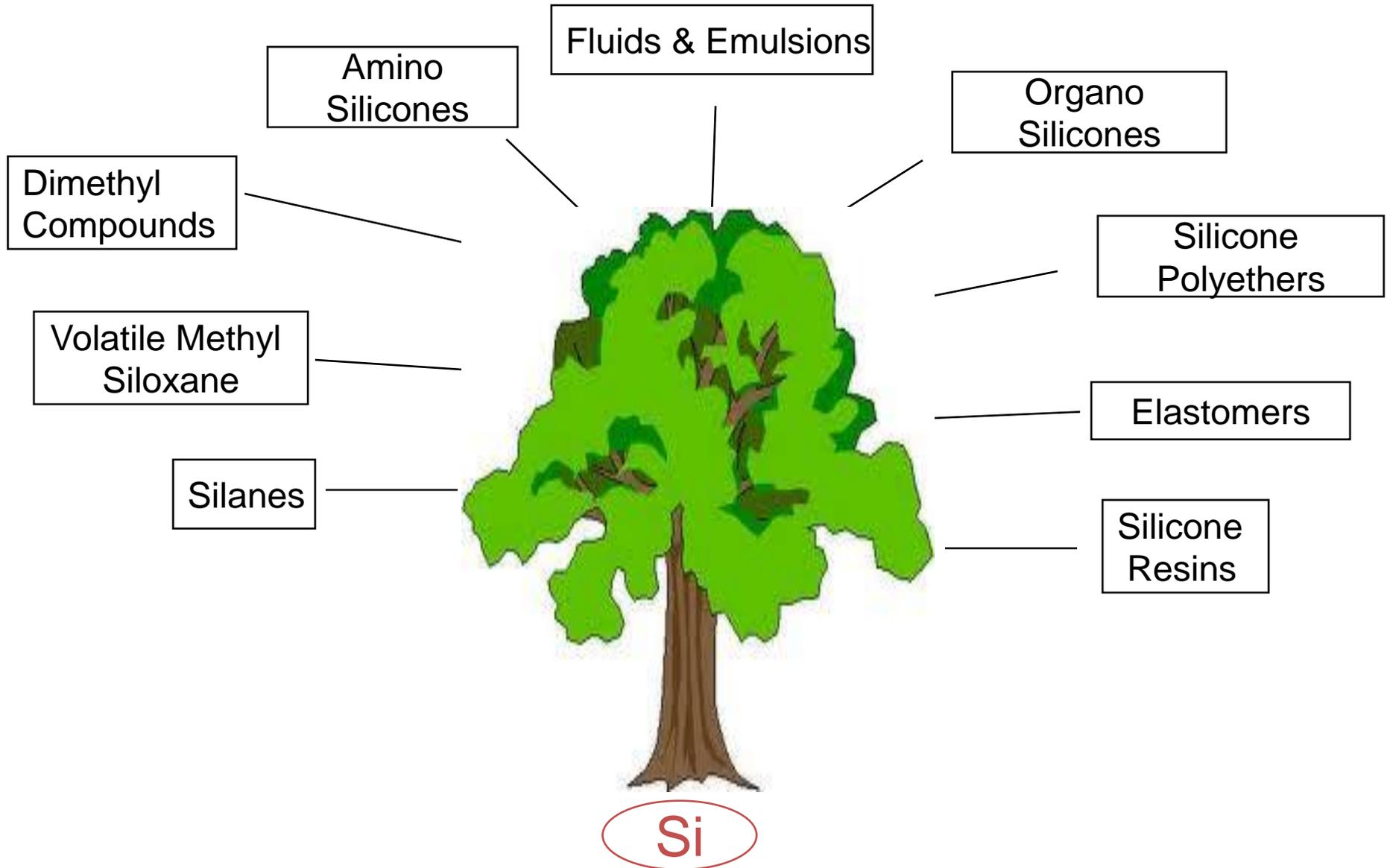
Pressure-Sensitive Adhesives

Textiles & Leather

Contraceptive.....etc



Silicone Family Tree



Use of Silicones - protect, prevent, preserve

Protect....

- Protects Building structural integrity
- :- Silicone sealants, adhesives, structural glazes.
 - :- High resistance to heat, wind, moisture and chemicals,
 - :- Reduce erosion – even in the most extreme environment.

Preserve.....

- Help to revive heritage buildings without compromising appearance.
 - :- Silicone sealants and adhesives add a protective layer that offers strengthens.
 - :- Adds water repellency, offers “breathability” to natural material.
 - :- Restore strength and permeability to crumbling facades, weakened structures and deteriorating joints without compromising the integrity of the original material.

Use of Silicones.

Strengthen.....

- :- Silicones bring strength and enhanced structural performance to building materials.
- :- Silicones bond even the most diverse materials together such as concrete, glass, granite, marble, aluminum, steel and plastics.

Enable.....

- Meets Modern Architectural Demands.
- :- Offers strength and exceptional design flexibility.e.g. silicone sealants and glazing make insulating glass panels that are more resistant to heat, ultraviolet light and movement and are strong enough to be used in massive structures.
- :- Buildings can have more natural sunlight without compromising structural integrity or insulation. It is not surprising that silicones bring light into some of the world's most spectacular projects.

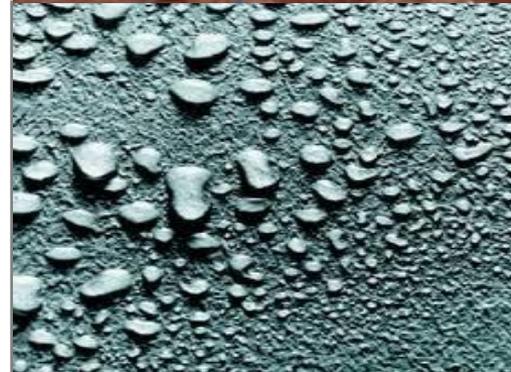
Silicone Sealants

- Window Joints.
- External Façade & Glazing.
- Sanitary Sealants.
- Expansion Joints Sealant.
- Aluminum Composite Panels.
- Glass & Organic Compounds.



Silicone Coating

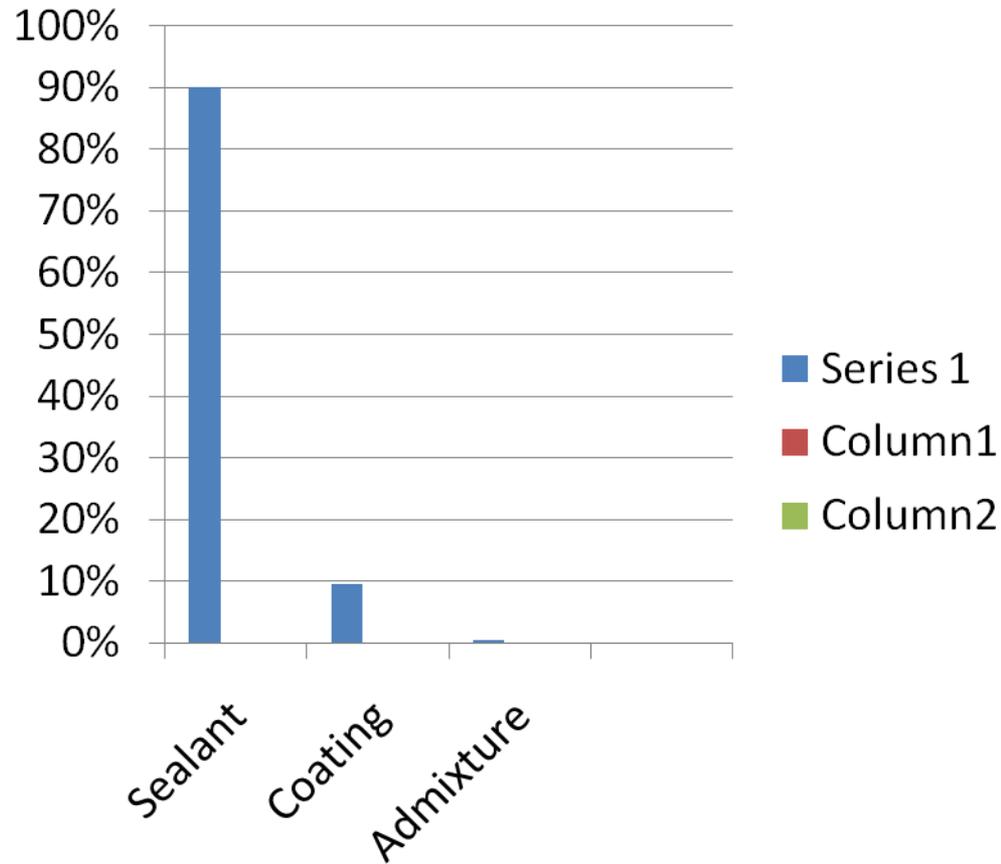
- Exposed Brick Masonry.
- External Stone Cladding.
- External Painted Surfaces.
- Heritage Plastered Surfaces.
- Wood Preservation.
- Heritage Structures Restoration.
- Exposed Concrete Surfaces.
- Mould Release (SRA).
- Stain Resistent.



Silicone as an Admixture

- Cement Sand Plaster
- PCC / RCC
- Water Borne Structures.
- Gypsum Plaster Board.
- Asbestos Sheets.
- Light Weight Concrete

Silicones Consumption in Construction Industry in India

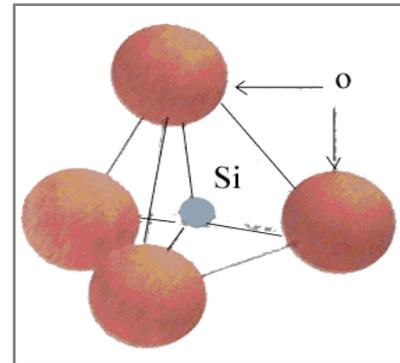


Studies conducted....

Substrate	Surface Coating		Admixture
	Water Absorption Reduction	Durability /perf. Study Yrs.	Water Absorption Reduction
Concrete	99.00%	5.00	65%
Plaster	99.00%	5.00	90%
Brick	99.50%	3.50	N/A
Gypsum	99.00%	3.50	80%
Asbestos / Cement Sheet	99.00%	5.00	99%
Sand Stone	99.00%	5.00	N/A
Wood	99.5%	3.00	N/A

Uniqueness

- Highly resistant to heat.
- Excellent Flexibility.
- Impermeable to water yet allows breathing.
- Resistant to chemical attack.
- Used in waterproofing treatments for coating, sealing and as an admixture for external plaster & concrete 1
- Withstands extreme weather.
- Resistant to UV,



References,

Wikipedia

www.sehc.com

www.siaj.jp

RnD : Elkay



Thank You!

