# MATERIAL SAFETY DATA SHEET

## 1. Chemical product and company identification

**A: Product name** **SEALANT-90N-B**

**B. Recommended use and Limitations on use**

**Recommended use** Sealants
Silicone Sealant for construction

**Limitations on use** Industrial use only.

**C. Supplier information**

**MANUFACTURER**

**COMPANY NAME** ShinEtsu Silicone Korea Co., Ltd.
**CONTACT** Business Operation Dept.
**ADDRESS** GT TOWER 15F, 411, SEOCHO-DAERO, SEOCHO-GU, SEOUL, KOREA
**TELEPHONE NUMBER** +82(0)2-590-2500
**FAX NUMBER** +82(0)2-590-2501

**SUPPLIER**

**COMPANY NAME** Shin-Etsu Silicone Korea Co., Ltd.
**CONTACT** Business Operation Dept.
**ADDRESS** GT TOWER 15F, 411, SEOCHO-DAERO, SEOCHO-GU, SEOUL, KOREA
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**E-MAIL** msds@shinetsu.net

## 2. Hazards identification

**A. Hazard category/Classification**

**Physical hazards** Not classified.
**Health hazards** Not classified.
**Environmental hazards** Not classified.

**B. Warning label items including precautionary statement**

**• Pictogram** None.
**• Signal word** None.
**• Hazard statement** None.
**• Precautionary statement** None.

**C. Other hazards not included in the hazard category criteria (e.g. dust explosion hazard)** This product reacts with water , moisture or humid air to evolve following compounds:
Methanol

**Supplemental information** None.

## 3. Composition/information on ingredients

| Chemical identity | Common and alternative names | CAS number | ID number | Content in percent (%) |
|---|---|---|---|---|
| Inorganic compound(s) ; No hazardous component(s) | Common and alternative name ; No data | Proprietary | Proprietary | 45 - 50 |
| Silicone(s) ; No hazardous component(s) | Common and alternative name ; No data | Proprietary | Proprietary | 45 - 50 |
| Alkoxysilane(A) | Common and alternative name ; No data | Proprietary | Proprietary | 1 - 5 |
| Carbon black | Common and alternative name ; No data | 1333-86-4 | KE-04682 | 0.1 - 1 |
| Alkoxysilane(B) | Common and alternative name ; No data | Proprietary | Proprietary | 0.1 - 1 |

| Decomposition | Common and alternative names | CAS number | ID number | Content in percent (%) |
|---|---|---|---|---|
| Methanol | Common and alternative name ; Methyl alcohol | 67-56-1 | KE-23193, 97-1-80 | |

## 4. First aid measures

**A. In case of eye contact** Rinse immediately with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

**B. In case of skin contact** Wash skin with soap and water. Get medical attention if irritation develops and persists.

**C. In case of inhalation** Move to fresh air. Call a physician if symptoms develop or persist.

**D. In case of swallowing** Rinse mouth. Get medical attention immediately.

**E. Note to physician** Treat symptomatically.

**General advice** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

**A. Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media** Not available.

**B. Specific hazards arising from the chemical (example: hazardous combustion products)** By heating and fire, harmful vapors/gases may be formed.

**C. Specific methods of fire-fighting**

**Special protective equipment for firefighters** Firefighters must use standard protective equipment including flame retardant coat, helmet, gloves, rubber boots, and self-contained breathing apparatus.

**Special fire fighting procedures** Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.

## 6. Accidental release measures

**A. Personal precautions, protective equipment and emergency measures** Wear appropriate personal protective equipment.

**B. Environmental precautions** Prevent further leakage or spillage if safe to do so.

**C. Methods and materials for containment and cleaning up** Eliminate sources of ignition.

Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use.

## 7. Handling and storage

**A. Precautions for safe handling** Provide adequate ventilation. Use care in handling/storage. Do not breathe mist or vapor. Avoid prolonged exposure.

**B. Conditions for safe storage (including any incompatibilities)** Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store away from incompatible materials (see Section 10 of the MSDS). Keep in original container.

## 8. Exposure controls/personal protection

**A. Exposure limit values, biological limit values, etc**

**Korea. OELs. Standards for Exposure to Chemical Substances and Physically Hazardous Factors**

| Components | Type | Value |
|---|---|---|
| Carbon black Common and alternative name ; No data (CAS 1333-86-4) | TWA | 3.5 mg/m3 |

**Korea. OELs. Standards for Exposure to Chemical Substances and Physically Hazardous Factors**

| Decomposition | Type | Value |
|---|---|---|
| Methanol Common and alternative name ; Methyl alcohol (CAS 67-56-1) | STEL | 310 mg/m3 |
| | | 250 ppm |
| | TWA | 260 mg/m3 |
| | | 200 ppm |

**US. ACGIH Threshold Limit Values**

| Components | Type | Value | Form |
|---|---|---|---|
| Carbon black Common and alternative name ; No data (CAS 1333-86-4) | TWA | 3 mg/m3 | Inhalable fraction. |

| Decomposition | Type | Value |
|---|---|---|
| Methanol Common and alternative name ; Methyl alcohol (CAS 67-56-1) | STEL | 250 ppm |
| | TWA | 200 ppm |

**Biological limit values**

**ACGIH Biological Exposure Indices**

| Decomposition | Value | Determinant | Specimen | Sampling Time |
|---|---|---|---|---|
| Methanol Common and alternative name ; Methyl alcohol (CAS 67-56-1) | 15 mg/l | Methanol | Urine | * |

* - For sampling details, please see the source document.

**Exposure guidelines** Occupational Exposure Limits are not relevant to the current physical form of the product. Other components are not applicable

**Korea OELs: Skin designation**

Methanol Common and alternative name ; Methyl alcohol (CAS 67-56-1) — Substance can be absorbed through membrane, eye and skin and can cause whole body effects (It does not mean skin irritant).

**US ACGIH Threshold Limit Values: Skin designation**

Methanol Common and alternative name ; Methyl alcohol (CAS 67-56-1) — Can be absorbed through the skin.

**B. Appropriate engineering controls** Provide adequate general and local exhaust ventilation. Provide eyewash station. Pay attention to ventilation such as local exhaust, mechanical and/or door open for at least 24 hours after application.

**C. Personal protective equipment**

- **Respiratory protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- **Eye protection** Wear safety glasses with side shields (or goggles).
- **Hand protection** Wear protective gloves.
- **Body protection** Wear suitable protective clothing.

**Hygiene measures** Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

**A. Appearance**

**Form** Paste.

**Color** Black.

**B. Odor** Alcohol odor

**C. Odor threshold** Not available.

**D. pH** Not measurable (Refer to water solubility)

**E. Melting point/freezing point**

**Melting point** No data

| | |
|---|---|
| **F. Boiling point, initial boiling point, and boiling range** | Not applicable |
| **G. Flash point** | 109.4 °F (43 °C) Closed Cup (Does not sustain combustion) |
| **H. Evaporation rate** | < 1 (Butyl Acetate=1) |
| **I. Flammability (solid, gas)** | Not applicable. |
| **J. Upper/lower limit on flammability or explosive limits** | |
| **Flammability limit - lower (%)** | 6.0 % v/v [Methanol] |
| **Flammability limit - upper (%)** | 36.0 % v/v [Methanol] |
| **Explosive limit - lower (%)** | Not available. |
| **Explosive limit - upper (%)** | Not available. |
| **K. Vapor pressure** | Negligible ( 25 °C ) |
| **L. Solubility** | |
| **Solubility (water)** | Not soluble |
| **M. Vapor density** | > 1 (air=1) |
| **N. Specific gravity** | 1.4 ( 25 °C ) |
| **O. n-octanol/water partition coefficient** | Not applicable |
| **P. Auto-ignition temperature** | No data |
| **Q. Decomposition temperature** | Not available. |
| **R. Viscosity** | Not applicable |
| **S. Molecular weight** | Not applicable |

## 10. Stability and reactivity

| | |
|---|---|
| **A. Stability and hazardous reaction potential** | |
| **Stability** | Stable at normal conditions. |
| **Hazardous reaction potential** | Hazardous polymerization does not occur. |
| **B. Conditions to avoid (e.g. static discharge, shock or vibration, etc)** | Not available. |
| **C. Incompatible materials** | Strong oxidizing agents. Water, moisture. |
| **D. Hazardous decomposition products** | This product reacts with water, moisture or humid air to evolve following compounds:<br>Methanol<br>Thermal breakdown of this product during fire or very high heat condition may evolve the following hazardous decomposition product:<br>Carbon oxides and traces of incompletely burned carbon compounds. Silicon dioxide.<br>Formaldehyde . |

## 11. Toxicological information

**A. Information on likely routes of exposure**

| | |
|---|---|
| **• Respiratory organs** | No significant effects are expected. |
| **• Skin** | No significant effects are expected. |
| **• Eyes** | No significant effects are expected. |
| **• Mouth** | No significant effects are expected. |

**B. Information on health hazards**

**• Acute toxicity (list all possible routes of exposure)**

| Components | Species | Test Results |
|---|---|---|
| Alkoxysilane(A) Common and alternative name ; No data | | |
| **Acute** | | |
| **Inhalation** | | |
| LC50 | Rat | > 7605 ppm OECD 403 |

| Components | Species | Test Results |
|---|---|---|
| **Oral** | | |
| LD50 | Rat | 12300 µl/kg |
| **Subchronic** | | |
| **Inhalation** | | |
| NOAEL | Rat | 0.56 mg/l OECD 413 |

Alkoxysilane(B) Common and alternative name ; No data

| | | |
|---|---|---|
| **Acute** | | |
| **Dermal** | | |
| LD50 | Rabbit | 4290 mg/kg |
| **Oral** | | |
| LD50 | Rat | 1570 - 3650 mg/kg |
| | | 1780 mg/kg |

Carbon black Common and alternative name ; No data (CAS 1333-86-4)

| | | |
|---|---|---|
| **Acute** | | |
| **Oral** | | |
| LD50 | Rat | > 8000 mg/kg |

| Decomposition | Species | Test Results |
|---|---|---|

Methanol Common and alternative name ; Methyl alcohol (CAS 67-56-1)

| | | |
|---|---|---|
| **Acute** | | |
| **Dermal** | | |
| LD50 | Rabbit | 15800 mg/kg |
| **Inhalation** | | |
| LC50 | Rat | 64000 ppm, 4 Hours |
| | | 87.5 mg/l, 6 Hours |
| **Oral** | | |
| LD50 | Mouse | 7300 mg/kg |
| | Rabbit | 14.4 g/kg |
| | Rat | 5628 mg/kg |

**• Corrosivity or irritation to the skin** SKIN-RABBIT : 5mg/24Hr SEVERE [Alkoxysilane(B)]

**• Serious eye damage/eye irritation** EYE-RABBIT : 0.75mg/24Hr SEVERE [Alkoxysilane(B)]

**• Respiratory sensitization** Not available.

**• Skin sensitization** No skin sensitizing(guinea pig) [Alkoxysilane(A) ]
May cause an allergic skin reaction. [Alkoxysilane(B) ]

**• Carcinogenic properties /Carcinogenicity** The following material is embedded in the product and not available as respirable dusts. When used as intended or as supplied, the product will not pose hazards of the following material. Carbon black.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

| | |
|---|---|
| Carbon black Common and alternative name ; No data (CAS 1333-86-4) | 2B Possibly carcinogenic to humans. |

**• Mutagenic properties /Mutagenicity** Negative(Bacteria) [Alkoxysilane (A)]
Negative(Ames Test) [Alkoxysilane (B)]

**• Reproductive toxicity** Not available.

**• Specific target organ toxicity - single exposure** May cause damage to the following organs.
Optic nerves. Central nervous system. [Methanol]

**• Specific target organ toxicity - repeated exposure** Not available.

**• Aspiration hazard** Not available.

**C. Other information** This product reacts with water , moisture or humid air to evolve following compounds:
Methanol

Other components are no data.

## 12. Ecological information

**A. Ecotoxicity**

| Components | | Species | Test Results |
|---|---|---|---|
| Alkoxysilane(B) Common and alternative name ; No data | | | |
| **Aquatic** | | | |
| Fish | LC50 | Oryzias latipes | > 1000 mg/l, 48 hr |
| **Decomposition** | | **Species** | **Test Results** |
| Methanol Common and alternative name ; Methyl alcohol (CAS 67-56-1) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Water flea (Daphnia magna) | > 10000 mg/l, 48 hours |
| Fish | LC50 | Fathead minnow (Pimephales promelas) | > 100 mg/l, 96 hours |

**Hazardous to the aquatic environment, acute hazard** Not available.

**Hazardous to the aquatic environment, long-term hazard** Not available.

**B. Persistence/degradability** Causes easily hydrolysis in water or atmosphere. [Alkoxysilane]

**C. Bioaccumulative potential** No data available.

**D. Mobility in soil** No data available.

**E. Hazardous to the ozone layer** No data available.

**F. Other adverse effects** Other components are no data.

## 13. Disposal considerations

**A. Method of disposal** Not hardening substance : Incinerate. Incinerator should be appropriately equipped for silica and other fine powder which the product will generate in incineration. Workers should wear appropriate personal protective equipment(s) such as respirator.
Hardening substance : Bury or incinerate. Incinerator should be appropriately equipped for silica and other fine powder which the product will generate in incineration. Workers should wear appropriate personal protective equipment(s) such as respirator.
Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Dispose of contents/container in accordance with local/regional/national/international regulations.

**B. Disposal considerations (including disposal of contaminated containers or packaging)** Since emptied containers may retain product residue, follow label warnings even after container is emptied.

**Waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

## 14. Transport information

**IATA**

**A. UN number** Not applicable.
**B. UN proper shipping name** Not applicable.
**C. Transport hazard class(es)**
**Class** Not applicable.
**Subsidiary risk** -
**D. Packing group** Not applicable.
**E. Environmental hazards** No.
**F. Special precautions for user** Not applicable.

**IMDG**

**A. UN number** Not applicable.
**B. UN proper shipping name** Not applicable.
**C. Transport hazard class(es)**
**Class** Not applicable.
**Subsidiary risk** -
**D. Packing group** Not applicable.
**E. Environmental hazards**
**Marine pollutant** No.

| | |
|---|---|
| **EmS** | Not applicable. |
| **F. Special precautions for user** | Not applicable. |
| **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** | This product is not intended to be transported in bulk. |

## 15. Regulatory information

**A. Restriction under the Occupational Safety and Health Act**

**Harmful Substances Prohibited from Manufacturing**

Not regulated.

**Harmful Substances Requiring Permission for Manufacture or Use**

Not regulated.

**Controlled Hazardous Substances**

Not regulated.

**Harmful Substances Requiring Special Medical Examination**

Not regulated.

**Workplace Environmental Monitoring Harmful Materials**

Not regulated.

**Occupational Exposure Limit**

CARBON BLACK (CAS 1333-86-4)

**B. Restrictions under the Toxic Chemicals Control Act**

**Accidental Release Prevention Substances**

Not regulated.

**Banned Toxic Chemicals**

Not regulated.

**Observational Chemicals**

Not regulated.

**Restricted Chemical Substances**

Not regulated.

**Toxic Chemicals**

Not regulated.

**C. Restrictions under the Safety Control of Dangerous Substances Act**

Not regulated

**D. Restrictions under the Wastes Control Act**

**Halogenated Materials in Waste Organic Solvents**

Not regulated.

**Hazardous Substances**

Not regulated.

**E. Restrictions under other foreign or domestic laws**

**Clean Air Conservation Act**

**Air Pollutants**

Not regulated.

**Specific Air Pollutants**

Not regulated.

**Further information** This material safety data sheet was prepared in accordance with Article 41 of the Industrial Safety and Health Law.

**Inventory status**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Korea | Existing Chemicals List (ECL) | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information

**A. Source of information**

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
Korea. Accidental Release Prevention Substances (Presidential Decree of Toxic Chemical Control Law, Executive Order No. 19203)
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)
Korea. Harmful Substances Prohibited from Manufacturing (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 29)
Korea. Harmful Substances Requiring Permission for Manufacture or Use (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 30)
Korea. Non-Toxic Chemicals List (National Institute of Environment Research (NIER) Public Notice No. 1997-10, as amended)
Korea. Observational Chemicals (Ministerial Decree of TCCL Article 6)
Korea. OELs. Regulation for Permitted Concentration of Hazardous Substances (Ministry of Labor (MOL) Public Notice No. 1986-45, as amended)
Korea. Prohibited Chemical Substances (TCCL Article 11)
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)
Korea. Restricted Chemical Substances (TCCL Article 11)
Korea. Toxic Chemical Control Law (TCCL), Existing Chemicals Inventory (KECI)
Korea. Toxic Chemical Control Law (TCCL), pre-1997 List
Korea. Toxic Chemicals (TCCL Article 10)
Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)
Korea. Employment Labor Department Notification No. 2016-19

**B. Issue date**

10-10-2013

**C. Number of revisions and date of most recent revision**

06-01-2017 (03 revision)

**D. Other**

Not available.

**Disclaimer**

This information is offered in good faith as typical values and not as a product specification. No warranty, expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.
This product has been designed, manufactured and developed solely for general industrial use only. This product is not designed for, intended for use as, or suitable for, medical, surgical or other particular purposes. Users have the sole responsibility and obligation to determine the suitability of this product for any application, to make preliminary tests, and to confirm the safety of this product for their use. Users must never use this product for the purpose of implantation into the human body and/or injection into humans.

**Revision information**

This document has undergone significant changes and should be reviewed in its entirety.