

| | |
|--|---|
| Disposal | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | 48.64% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 48.64% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment. |

3. Composition/information on ingredients

Mixtures

| Chemical name | CAS number | % |
|--------------------|-------------|---------|
| Epoxy Resin | 25068-38-6 | 35 - 60 |
| Aluminum oxide | 1344-28-1 | 20 - 35 |
| Silicon Dioxide | 67762-90-7 | 10 - 25 |
| Epoxy Resin | 28064-14-4 | 0 - 25 |
| Magnesium Silicate | 14807-96-6 | 5 - 20 |
| Titanium dioxide | 13463-67-7 | 1 - 10 |
| Crystalline Silica | 14808-60-7 | 1 - 5 |
| Fumed Silica | 112945-52-5 | 0 - 5 |

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

| | |
|---|--|
| Inhalation | Move to fresh air. Call a physician if symptoms develop or persist. |
| Skin contact | Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse. |
| Eye contact | Immediately flush eyes with plenty of water for at least 15 minutes. Provide eyewash station. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth. Get medical attention if symptoms occur. |
| Most important symptoms/effects, acute and delayed | Causes skin irritation. Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing. Discomfort in the chest. Shortness of breath. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects. May cause cancer. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. |
| General information | IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. |

5. Fire-fighting measures

| | |
|--|---|
| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this will spread the fire. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| Fire fighting equipment/instructions | Move containers from fire area if you can do so without risk. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. |

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

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

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

| Components | Type | Value | Form |
|-----------------------------------|------|----------|----------------------|
| Aluminum oxide (CAS 1344-28-1) | PEL | 5 mg/m3 | Respirable fraction. |
| | | 15 mg/m3 | Total dust. |
| Titanium dioxide (CAS 13463-67-7) | PEL | 15 mg/m3 | Total dust. |

US. OSHA Table Z-3 (29 CFR 1910.1000)

| Components | Type | Value | Form |
|-------------------------------------|------|-----------|-------------|
| Crystalline Silica (CAS 14808-60-7) | TWA | 0.3 mg/m3 | Total dust. |
| | | 0.1 mg/m3 | Respirable. |
| | | 2.4 mppcf | Respirable. |
| Fumed Silica (CAS 112945-52-5) | TWA | 0.8 mg/m3 | |
| | | 20 mppcf | |
| Magnesium Silicate (CAS 14807-96-6) | TWA | 0.3 mg/m3 | Total dust. |
| | | 0.1 mg/m3 | Respirable. |
| | | 20 mppcf | |
| | | 2.4 mppcf | Respirable. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|-------------------------------------|------|-------------|----------------------|
| Aluminum oxide (CAS 1344-28-1) | TWA | 1 mg/m3 | Respirable fraction. |
| Crystalline Silica (CAS 14808-60-7) | TWA | 0.025 mg/m3 | Respirable fraction. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|-------------------------------------|------|----------------------|----------------------|
| Magnesium Silicate (CAS 14807-96-6) | TWA | 2 mg/m ³ | Respirable fraction. |
| Titanium dioxide (CAS 13463-67-7) | TWA | 10 mg/m ³ | |

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| Components | Type | Value | Form |
|-------------------------------------|------|------------------------|------------------|
| Crystalline Silica (CAS 14808-60-7) | TWA | 0.05 mg/m ³ | Respirable dust. |
| Fumed Silica (CAS 112945-52-5) | TWA | 6 mg/m ³ | |
| Magnesium Silicate (CAS 14807-96-6) | TWA | 2 mg/m ³ | Respirable. |

| | |
|--|--|
| Biological limit values | No biological exposure limits noted for the ingredient(s). |
| Appropriate engineering controls | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. |
| Individual protection measures, such as personal protective equipment | |
| Eye/face protection | Chemical respirator with organic vapor cartridge and full facepiece. |
| Skin protection | |
| Hand protection | Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. |
| Skin protection | |
| Other | Wear appropriate chemical resistant clothing. Wash hands thoroughly after handling. Use of an impervious apron is recommended. |
| Respiratory protection | Chemical respirator with organic vapor cartridge and full facepiece. |
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace. |

9. Physical and chemical properties

Appearance

| | |
|--|-----------------|
| Physical state | Liquid. |
| Form | Viscous liquid. |
| Color | Ash Grey. |
| Odor | Low. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Initial boiling point and boiling range | Not available. |
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not applicable. |

Upper/lower flammability or explosive limits

| | |
|---------------------------------------|----------------|
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Explosive limit - lower (%) | Not available. |

| | |
|--|-----------------------------|
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | 13.5 lb/gal (77 °F (25 °C)) |
| Solubility(ies) | |
| Solubility (water) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | 300000 cps |
| Viscosity temperature | 77 °F (25 °C) |
| Other information | |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |

10. Stability and reactivity

| | |
|---|--|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Contact with incompatible materials. Avoid extremely high temperatures. Freezing temperatures. Moisture. |
| Incompatible materials | Acids. Chlorine. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

| | |
|---------------------|--|
| Inhalation | May cause damage to organs through prolonged or repeated exposure by inhalation. |
| Skin contact | Causes skin irritation. May cause an allergic skin reaction. |
| Eye contact | Causes serious eye irritation. |
| Ingestion | Expected to be a low ingestion hazard. |

Symptoms related to the physical, chemical and toxicological characteristics Causes skin irritation. Causes serious eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Coughing. Discomfort in the chest. Shortness of breath. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects. May cause cancer.

Information on toxicological effects

Acute toxicity May cause an allergic skin reaction.

| Components | Species | Test Results |
|-------------------------------------|----------------|---------------------|
| Epoxy Resin (CAS 25068-38-6) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rat | > 2000 mg/kg |
| <i>Oral</i> | | |
| LD50 | Rat | > 5000 mg/kg |
| Magnesium Silicate (CAS 14807-96-6) | | |
| Acute | | |
| <i>Oral</i> | | |
| LD50 | Rat | > 5000 mg/kg |

| Components | Species | Test Results |
|---|--|----------------------|
| Titanium dioxide (CAS 13463-67-7) | | |
| Acute | | |
| <i>Inhalation</i> | | |
| LC50 | Rat | > 2.28 mg/l, 4 Hours |
| <i>Oral</i> | | |
| LD50 | Rat | > 11000 mg/kg |
| Skin corrosion/irritation | Causes skin irritation. | |
| Serious eye damage/eye irritation | Causes serious eye irritation. | |
| Respiratory or skin sensitization | | |
| Respiratory sensitization | Not a respiratory sensitizer. | |
| Skin sensitization | May cause an allergic skin reaction. | |
| Germ cell mutagenicity | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. | |
| Carcinogenicity | May cause cancer. Crystalline silica has been classified by IARC, NTP and ACGIH as a known human carcinogen and suspected human carcinogen respectively. | |
| IARC Monographs. Overall Evaluation of Carcinogenicity | | |
| Crystalline Silica (CAS 14808-60-7) | 1 Carcinogenic to humans. | |
| Fumed Silica (CAS 112945-52-5) | 3 Not classifiable as to carcinogenicity to humans. | |
| Magnesium Silicate (CAS 14807-96-6) | 2B Possibly carcinogenic to humans. | |
| Titanium dioxide (CAS 13463-67-7) | 3 Not classifiable as to carcinogenicity to humans. 2B Possibly carcinogenic to humans. | |
| NTP Report on Carcinogens | | |
| Crystalline Silica (CAS 14808-60-7) | Known To Be Human Carcinogen. | |
| OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) | | |
| Not regulated. | | |
| Reproductive toxicity | This product is not expected to cause reproductive or developmental effects. | |
| Specific target organ toxicity - single exposure | Not classified. | |
| Specific target organ toxicity - repeated exposure | Causes damage to organs (lung) through prolonged or repeated exposure. | |
| Aspiration hazard | Not an aspiration hazard. | |
| Chronic effects | Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects. | |

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

| Components | Species | Test Results |
|--------------------------------------|---|--------------------|
| Epoxy Resin (CAS 25068-38-6) | | |
| Fish | LC50 | Salmo gairdneri |
| | | 1.5 mg/l, 96 hours |
| Aquatic | | |
| Crustacea | EC50 | Daphnia magna |
| | | 2.7 mg/l, 48 hours |
| Persistence and degradability | No data is available on the degradability of this product. | |
| Bioaccumulative potential | No data available. | |
| Mobility in soil | No data available. | |
| Other adverse effects | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. | |

13. Disposal considerations

| | |
|-----------------------------------|--|
| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |

| | |
|--|--|
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Waste from residues / unused products | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|----------------|------------|----------|
| Aluminum oxide | 1344-28-1 | 20 - 35 |

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Aluminum oxide (CAS 1344-28-1)
Crystalline Silica (CAS 14808-60-7)
Fumed Silica (CAS 112945-52-5)
Magnesium Silicate (CAS 14807-96-6)
Titanium dioxide (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

Aluminum oxide (CAS 1344-28-1)

Crystalline Silica (CAS 14808-60-7)
Magnesium Silicate (CAS 14807-96-6)
Titanium dioxide (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Aluminum oxide (CAS 1344-28-1)
Crystalline Silica (CAS 14808-60-7)
Fumed Silica (CAS 112945-52-5)
Magnesium Silicate (CAS 14807-96-6)
Titanium dioxide (CAS 13463-67-7)

US. Rhode Island RTK

Aluminum oxide (CAS 1344-28-1)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Crystalline Silica (CAS 14808-60-7)
Epoxy Resin (CAS 25068-38-6)
Titanium dioxide (CAS 13463-67-7)

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | No |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies 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, including date of preparation or last revision

| | |
|---------------------|---|
| Issue date | 22-June-2016 |
| Revision date | - |
| Version # | 01 |
| Further information | HMIS Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard NFPA Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe |
| HMIS® ratings | Health: 3* Flammability: 0 Physical hazard: 0 |

NFPA ratings



Disclaimer

NuKote Coating Systems cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

1. Identification

Product identifier Nukote Chemshield FC - Side B
Other means of identification None.
Recommended use Surface Protection. For Further Information, Refer to the Product Technical Data Sheet.
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Supplier

Company name Nukote Coating Systems International
Address 4730 Consulate Plaza Dr.
 Suite 100
 Houston, TX. 77032
Telephone 832-770-7100
Email SDS@nukoteglobal.com
Emergency Phone Number Chemtrec: 800-424-9300 (Account: CCN16118) or International: 703-527-3887 (Account: CCN16118)

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Acute toxicity, oral Category 4
 Acute toxicity, dermal Category 4
 Acute toxicity, inhalation Category 4
 Skin corrosion/irritation Category 1B
 Serious eye damage/eye irritation Category 1
 Sensitization, skin Category 1
 Reproductive toxicity Category 2
Environmental hazards Hazardous to the aquatic environment, acute hazard Category 3
 Hazardous to the aquatic environment, long-term hazard Category 3
OSHA defined hazards Not classified.
Label elements



Signal word Danger
Hazard statement Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child. Harmful to aquatic life with long lasting effects.
Precautionary statement
Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

| | |
|--|--|
| Response | If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. |
| Storage | Store locked up. |
| Disposal | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | None. |

3. Composition/information on ingredients

Mixtures

| Chemical name | CAS number | % |
|-----------------------------|------------|---------|
| Isophorone diamine | 2855-13-2 | 19 - 45 |
| Diethylenetriamine | 111-40-0 | 10 - 30 |
| m-Phenylenebis(methylamine) | 1477-55-0 | 9 - 15 |
| 4,4'-isopropylidenediphenol | 80-05-7 | 6 - 16 |
| Benzyl alcohol | 100-51-6 | 5 - 10 |

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

| | |
|---|--|
| Inhalation | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell. |
| Skin contact | Remove contaminated clothing immediately and wash skin with soap and water. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse. |
| Eye contact | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately. |
| Ingestion | Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. |
| Most important symptoms/effects, acute and delayed | Harmful if swallowed. Nausea, vomiting. Harmful in contact with skin. Harmful if inhaled. Coughing. Difficulty in breathing. Causes severe skin and eye burns. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause an allergic skin reaction. Rash. Dermatitis. Suspected of damaging fertility or the unborn child. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed. |
| General information | IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse. |

5. Fire-fighting measures

| | |
|--|--|
| Suitable extinguishing media | Alcohol resistant foam. Powder. Carbon dioxide (CO ₂). |
| Unsuitable extinguishing media | Do not use water jet as an extinguisher, as this will spread the fire. |
| Specific hazards arising from the chemical | During fire, gases hazardous to health may be formed. |
| Special protective equipment and precautions for firefighters | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| Fire fighting equipment/instructions | Move containers from fire area if you can do so without risk. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Use water spray to reduce vapors or divert vapor cloud drift. Prevent product from entering drains.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

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

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities Store locked up. Store in original tightly closed container. Store in a well-ventilated place.

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

| Components | Type | Value |
|---|---------|-----------|
| Diethylenetriamine (CAS 111-40-0) | TWA | 1 ppm |
| m-Phenylenebis(methylamine) (CAS 1477-55-0) | Ceiling | 0.1 mg/m3 |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value |
|---|---------|--------------------|
| Diethylenetriamine (CAS 111-40-0) | TWA | 4 mg/m3 |
| m-Phenylenebis(methylamine) (CAS 1477-55-0) | Ceiling | 1 ppm 0.1 mg/m3 |

US. Workplace Environmental Exposure Level (WEEL) Guides

| Components | Type | Value |
|-------------------------------|------|----------------------|
| Benzyl alcohol (CAS 100-51-6) | TWA | 44.2 mg/m3 10 ppm |

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US - California OELs: Skin designation

Diethylenetriamine (CAS 111-40-0) Can be absorbed through the skin.
m-Phenylenebis(methylamine) (CAS 1477-55-0) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Diethylenetriamine (CAS 111-40-0) Skin designation applies.

US - Tennessee OELs: Skin designation

| | |
|---|-----------------------------------|
| m-Phenylenebis(methylamine) (CAS 1477-55-0) | Can be absorbed through the skin. |
|---|-----------------------------------|

US ACGIH Threshold Limit Values: Skin designation

| | |
|---|-----------------------------------|
| Diethylenetriamine (CAS 111-40-0) | Can be absorbed through the skin. |
| m-Phenylenebis(methylamine) (CAS 1477-55-0) | Can be absorbed through the skin. |

US. NIOSH: Pocket Guide to Chemical Hazards

| | |
|---|-----------------------------------|
| Diethylenetriamine (CAS 111-40-0) | Can be absorbed through the skin. |
| m-Phenylenebis(methylamine) (CAS 1477-55-0) | Can be absorbed through the skin. |

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties**Appearance**

Physical state Liquid.

Form Liquid.

Color Straw to Yellow.

Odor Strong ammonia.

Odor threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not available.

Vapor density Not available.

Relative density 9.01 lb/gal (77 °F (25 °C))

Solubility(ies)

Solubility (water) Not available.

| | |
|--|----------------|
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | Not available. |
| Viscosity | 4000 cps |
| Viscosity temperature | 77 °F (25 °C) |
| Other information | |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |

10. Stability and reactivity

| | |
|---|---|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | Strong acids. Alkaline metals. Peroxides. Phenols. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

| | |
|---------------------|--|
| Inhalation | Harmful if inhaled. |
| Skin contact | Causes severe skin burns. Harmful in contact with skin. May cause an allergic skin reaction. |
| Eye contact | Causes serious eye damage. |
| Ingestion | Causes digestive tract burns. Harmful if swallowed. |

Symptoms related to the physical, chemical and toxicological characteristics Harmful if swallowed. Nausea, vomiting. Harmful in contact with skin. Harmful if inhaled. Coughing. Causes severe skin burns and eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause allergic skin reaction. Rash. Dermatitis. Suspected of damaging fertility or the unborn child.

Information on toxicological effects

Acute toxicity Harmful if inhaled. Harmful in contact with skin. Harmful if swallowed. May cause an allergic skin reaction.

| Components | Species | Test Results |
|---|---------|-------------------|
| 4,4'-isopropylidenediphenol (CAS 80-05-7) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | 3000 mg/kg |
| <i>Oral</i> | | |
| LD50 | Rat | 3300 - 4100 mg/kg |
| Benzyl alcohol (CAS 100-51-6) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | 2000 mg/kg |
| <i>Inhalation</i> | | |
| LC50 | Rat | 8.8 mg/l, 4 Hours |
| <i>Oral</i> | | |
| LD50 | Rat | 1230 - 3100 mg/kg |
| Diethylenetriamine (CAS 111-40-0) | | |
| Acute | | |
| <i>Dermal</i> | | |
| LD50 | Rabbit | 550 mg/kg |

| Components | Species | Test Results |
|---|--|--------------------|
| <i>Oral</i> LD50 | Rat | 1080 mg/kg |
| m-Phenylenebis(methylamine) (CAS 1477-55-0) | | |
| Acute | | |
| <i>Dermal</i> LD50 | Rabbit | 2000 mg/kg |
| <i>Inhalation</i> LC50 | Rat | 3.75 mg/l, 1 Hours |
| <i>Oral</i> LD50 | Rat | 930 mg/kg |
| Skin corrosion/irritation | Causes severe skin burns and eye damage. | |
| Serious eye damage/eye irritation | Causes serious eye damage. | |
| Respiratory or skin sensitization | | |
| Respiratory sensitization | Not a respiratory sensitizer. | |
| Skin sensitization | May cause an allergic skin reaction. | |
| Germ cell mutagenicity | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. | |
| Carcinogenicity | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. | |
| IARC Monographs. Overall Evaluation of Carcinogenicity | | |
| Not listed. | | |
| NTP Report on Carcinogens | | |
| Not listed. | | |
| OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) | | |
| Not regulated. | | |
| Reproductive toxicity | Suspected of damaging fertility or the unborn child. | |
| Specific target organ toxicity - single exposure | Not classified. | |
| Specific target organ toxicity - repeated exposure | Not classified. | |
| Aspiration hazard | Not an aspiration hazard. | |
| Chronic effects | Prolonged inhalation may be harmful. | |

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

| Components | Species | Test Results |
|---|---------|---|
| 4,4'-isopropylidenediphenol (CAS 80-05-7) | | |
| Aquatic | | |
| <i>Acute</i> | | |
| Crustacea | EC50 | Daphnia magna 10.2 mg/l, 48 Hours |
| Fish | LC50 | Pimephales promelas 4.6 mg/l, 96 Hours |
| <i>Chronic</i> | | |
| Crustacea | NOEC | Daphnia magna > 3.146 mg/l, 21 days |

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

| | |
|---|------|
| 4,4'-isopropylidenediphenol (CAS 80-05-7) | 3.32 |
| Benzyl alcohol (CAS 100-51-6) | 1.1 |

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

| | |
|--|--|
| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |
| Hazardous waste code | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Waste from residues / unused products | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions). |
| Contaminated packaging | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. |

14. Transport information

DOT

| | |
|-------------------------------------|--|
| UN number | UN2735 |
| UN proper shipping name | Polyamines, liquid, corrosive, n.o.s. (Isophorone diamine, Diethylenetriamine) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Label(s) | 8 |
| Packing group | II |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Special provisions | B2, IB2, T11, TP1, TP27 |
| Packaging exceptions | 154 |
| Packaging non bulk | 202 |
| Packaging bulk | 242 |

IATA

| | |
|-------------------------------------|--|
| UN number | UN2735 |
| UN proper shipping name | Polyamines, liquid, corrosive, n.o.s. (Isophorone diamine, Diethylenetriamine) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Label(s) | 8 |
| Packing group | II |
| Environmental hazards | No. |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |

IMDG

| | |
|-------------------------------------|--|
| UN number | UN2735 |
| UN proper shipping name | Polyamines, liquid, corrosive, n.o.s. (Isophorone diamine, Diethylenetriamine) |
| Transport hazard class(es) | |
| Class | 8 |
| Subsidiary risk | - |
| Label(s) | 8 |
| Packing group | II |
| Environmental hazards | |
| Marine pollutant | No. |
| EmS | Not available. |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

4,4'-isopropylidenediphenol (CAS 80-05-7) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|-----------------------------|------------|----------|
| 4,4'-isopropylidenediphenol | 80-05-7 | 6 - 16 |

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**US state regulations****US. Massachusetts RTK - Substance List**

4,4'-isopropylidenediphenol (CAS 80-05-7)
 Benzyl alcohol (CAS 100-51-6)
 Diethylenetriamine (CAS 111-40-0)
 m-Phenylenebis(methylamine) (CAS 1477-55-0)

US. New Jersey Worker and Community Right-to-Know Act

4,4'-isopropylidenediphenol (CAS 80-05-7)
 Diethylenetriamine (CAS 111-40-0)
 Isophorone diamine (CAS 2855-13-2)
 m-Phenylenebis(methylamine) (CAS 1477-55-0)

US. Pennsylvania Worker and Community Right-to-Know Law

4,4'-isopropylidenediphenol (CAS 80-05-7)
 Benzyl alcohol (CAS 100-51-6)
 Diethylenetriamine (CAS 111-40-0)
 m-Phenylenebis(methylamine) (CAS 1477-55-0)

US. Rhode Island RTK

4,4'-isopropylidenediphenol (CAS 80-05-7)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

4,4'-isopropylidenediphenol (CAS 80-05-7)

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|----------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates this product complies 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, including date of preparation or last revision

| | |
|----------------------------|---|
| Issue date | 22-June-2016 |
| Revision date | - |
| Version # | 01 |
| Further information | HMIS Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard NFPA Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe |
| HMIS® ratings | Health: 3* Flammability: 0 Physical hazard: 0 |

NFPA ratings



Disclaimer

NuKote Coating Systems cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.