# SAFETY DATA SHEET

**Date of issue/Date of revision** 11 April 2022
**Version** 3.03

## Section 1. Identification

**Product name** : PHENGUARD 610/780/930/935/940 HARDENER
**Product code** : 00429449
**Other means of identification** : Not available.
**Product type** : Liquid.

**Relevant identified uses of the substance or mixture and uses advised against**

**Product use** : Professional applications, Used by spraying.
**Use of the substance/ mixture** : Coating.
**Uses advised against** : Not applicable.

**Manufacturer** : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272
**Emergency telephone number** : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
SETIQ Interior de la República: 800-00-214-00 (México)
SETIQ Ciudad de México: (55) 5559-1588 (México)

**Technical Phone Number** : 888-977-4762

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (dermal) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION - Category 1
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
Percentage of the mixture consisting of ingredient(s) of unknown acute toxicity: 24.4% (oral), 28.3% (dermal), 41.2% (inhalation)

**GHS label elements**

# Section 2. Hazards identification

**Hazard pictograms** :



**Signal word** : Danger

**Hazard statements** : Flammable liquid and vapor.
Harmful if swallowed, in contact with skin or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure. (hearing organs)

**Precautionary statements**

**Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

**Response** : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. 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 or doctor.

**Storage** : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Supplemental label elements** : Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. This product either contains formaldehyde or is capable of releasing formaldehyde above 0.5 ppm under certain conditions. Formaldehyde is a known cancer hazard, a skin sensitizer and a respiratory sensitizer. Avoid contact with skin and clothing. Wash thoroughly after handling. Emits toxic fumes when heated.

**Hazards not otherwise classified** : Prolonged or repeated contact may dry skin and cause irritation.

# Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture
**Product name** : PHENGUARD 610/780/930/935/940 HARDENER

| Ingredient name | % | CAS number |
|---|---|---|
| xylene | ≥20 - ≤25 | 1330-20-7 |
| 3-aminopropyldiethylamine | ≥10 - ≤20 | 104-78-9 |
| benzyl alcohol | ≥10 - ≤15 | 100-51-6 |
| 2-methylpropan-1-ol | ≥5.0 - ≤10 | 78-83-1 |
| m-phenylenebis(methylamine) | ≥1.0 - ≤5.0 | 1477-55-0 |
| ethylbenzene | ≥1.0 - ≤4.4 | 100-41-4 |
| N-(3-(trimethoxysilyl)propyl)ethylenediamine | ≥1.0 - ≤4.2 | 1760-24-3 |
| salicylic acid | <1.0 | 69-72-7 |
| toluene | <1.0 | 108-88-3 |

SUB codes represent substances without registered CAS Numbers.

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

**Occupational exposure limits, if available, are listed in Section 8.**

# Section 4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

## Description of necessary first aid measures

**Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

**Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

**Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

**Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

## Most important symptoms/effects, acute and delayed

### Potential acute health effects

**Eye contact** : Causes serious eye damage.

**Inhalation** : Harmful if inhaled. May cause respiratory irritation.

**Skin contact** : Causes severe burns. Harmful in contact with skin. Defatting to the skin. May cause an allergic skin reaction.

**Ingestion** : Harmful if swallowed.

## Over-exposure signs/symptoms

# Section 4. First aid measures

**Eye contact** : Adverse symptoms may include the following:
pain
watering
redness

**Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced fetal weight
increase in fetal deaths
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

**Indication of immediate medical attention and special treatment needed, if necessary**

**Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments** : No specific treatment.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

**See toxicological information (Section 11)**

# Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media** : Use dry chemical, $CO_2$, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

# Section 5. Fire-fighting measures

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
metal oxide/oxides
Formaldehyde.

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

# Section 6. Accidental release measures

## Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

## Methods and materials for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

# Section 7. Handling and storage

## Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Special precautions** : Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. If this material is part of a multiple component system, read the Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 0 to 35°C (32 to 95°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

# Section 8. Exposure controls/personal protection

## Control parameters

### Occupational exposure limits

| Ingredient name | Exposure limits |
|---|---|
| xylene | **ACGIH TLV (United States, 1/2021).**<br>STEL: 651 mg/m³ 15 minutes.<br>STEL: 150 ppm 15 minutes.<br>TWA: 434 mg/m³ 8 hours.<br>TWA: 100 ppm 8 hours.<br>**OSHA PEL (United States, 5/2018).**<br>TWA: 435 mg/m³ 8 hours.<br>TWA: 100 ppm 8 hours. |
| 3-aminopropyldiethylamine | None. |
| benzyl alcohol | **IPEL (-).**<br>TWA: 5 ppm<br>STEL: 10 ppm |

# Section 8. Exposure controls/personal protection

| | |
|---|---|
| 2-methylpropan-1-ol | **ACGIH TLV (United States, 1/2021).**<br>TWA: 152 mg/m³ 8 hours.<br>TWA: 50 ppm 8 hours.<br>**OSHA PEL (United States, 5/2018).**<br>TWA: 300 mg/m³ 8 hours.<br>TWA: 100 ppm 8 hours. |
| m-phenylenebis(methylamine) | **ACGIH TLV (United States, 1/2021).**<br>**Absorbed through skin.**<br>C: 0.018 ppm |
| ethylbenzene | **ACGIH TLV (United States, 1/2021).**<br>TWA: 20 ppm 8 hours.<br>**OSHA PEL (United States, 5/2018).**<br>TWA: 435 mg/m³ 8 hours.<br>TWA: 100 ppm 8 hours. |
| N-(3-(trimethoxysilyl)propyl)ethylenediamine | None. |
| salicylic acid | None. |
| toluene | **OSHA PEL Z2 (United States, 2/2013).**<br>AMP: 500 ppm 10 minutes.<br>CEIL: 300 ppm<br>TWA: 200 ppm 8 hours.<br>**ACGIH TLV (United States, 1/2021).**<br>**Ototoxicant.**<br>TWA: 20 ppm 8 hours. |

**Key to abbreviations**

| | | | | | |
|---|---|---|---|---|---|
| A | = | Acceptable Maximum Peak | S | = | Potential skin absorption |
| ACGIH | = | American Conference of Governmental Industrial Hygienists. | SR | = | Respiratory sensitization |
| C | = | Ceiling Limit | SS | = | Skin sensitization |
| F | = | Fume | STEL | = | Short term Exposure limit values |
| IPEL | = | Internal Permissible Exposure Limit | TD | = | Total dust |
| OSHA | = | Occupational Safety and Health Administration. | TLV | = | Threshold Limit Value |
| R | = | Respirable | TWA | = | Time Weighted Average |
| Z | = | OSHA 29 CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances | | | |

**Consult local authorities for acceptable exposure limits.**

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Individual protection measures**

# Section 8. Exposure controls/personal protection

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Chemical splash goggles and face shield.

**Skin protection**

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Gloves** : butyl rubber

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
The respiratory protection shall be in accordance to 29 CFR 1910.134.

# Section 9. Physical and chemical properties

**Appearance**

**Physical state** : Liquid.

**Color** : Not available.

**Odor** : Characteristic.

**Odor threshold** : Not available.

**pH** : Not applicable.

**Melting point** : Not available.

**Boiling point** : >37.78°C (>100°F)

**Flash point** : Closed cup: 34°C (93.2°F)

**Auto-ignition temperature** : Not available.

**Decomposition temperature** : Not available.

**Flammability (solid, gas)** : Not available.

**Lower and upper explosive (flammable) limits** : Not available.

**Evaporation rate** : Not available.

# Section 9. Physical and chemical properties

**Vapor pressure** : Not available.

**Vapor density** : Not available.

**Relative density** : 0.93

**Density ( lbs / gal )** : 7.76

**Solubility** : Insoluble in the following materials: cold water.

**Partition coefficient: n-octanol/water** : Not applicable.

**Viscosity** : Kinematic (40°C (104°F)): >21 $mm^2/s$ (>21 cSt)

**Volatility** : 73% (v/v), 70.065% (w/w)

**% Solid. (w/w)** : 29.935

# Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** : When exposed to high temperatures may produce hazardous decomposition products. Refer to protective measures listed in sections 7 and 8.

**Incompatible materials** : Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids.

**Hazardous decomposition products** : Depending on conditions, decomposition products may include the following materials: carbon oxides nitrogen oxides Formaldehyde. metal oxide/oxides

# Section 11. Toxicological information

## Information on toxicological effects

### Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| xylene | LD50 Dermal | Rabbit | 1.7 g/kg | - |
| | LD50 Oral | Rat | 4.3 g/kg | - |
| 3-aminopropyldiethylamine | LD50 Dermal | Rabbit | 524 mg/kg | - |
| | LD50 Oral | Rat | 830 mg/kg | - |
| benzyl alcohol | LC50 Inhalation Dusts and mists | Rat | >4178 $mg/m^3$ | 4 hours |
| | LD50 Dermal | Rabbit | 2000 mg/kg | - |
| | LD50 Oral | Rat | 1.23 g/kg | - |
| 2-methylpropan-1-ol | LC50 Inhalation Vapor | Rat | 24.6 mg/l | 4 hours |
| | LD50 Dermal | Rabbit | 2460 mg/kg | - |
| | LD50 Oral | Rat | 2830 mg/kg | - |
| m-phenylenebis (methylamine) | LC50 Inhalation Gas. | Rat | 700 ppm | 1 hours |
| | LD50 Dermal | Rat - Male, | >3100 mg/kg | - |

# Section 11. Toxicological information

| | | | | |
|---|---|---|---|---|
| | | Female | | |
| | LD50 Oral | Rat | 930 mg/kg | - |
| ethylbenzene | LC50 Inhalation Vapor | Rat | 17.8 mg/l | 4 hours |
| | LD50 Dermal | Rabbit | 17.8 g/kg | - |
| | LD50 Oral | Rat | 3.5 g/kg | - |
| N-(3-(trimethoxysilyl)propyl) ethylenediamine | LD50 Oral | Rat | 2413 mg/kg | - |
| salicylic acid | LD50 Oral | Rat | 0.891 g/kg | - |
| toluene | LC50 Inhalation Vapor | Rat | 49 g/m³ | 4 hours |
| | LD50 Dermal | Rabbit | 8.39 g/kg | - |
| | LD50 Oral | Rat | 5580 mg/kg | - |

**Conclusion/Summary** : There are no data available on the mixture itself.

**Irritation/Corrosion**

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---|---|---|---|---|---|
| xylene | Skin - Moderate irritant | Rabbit | - | 24 hours 500 mg | - |
| 3-aminopropyldiethylamine | Skin - Visible necrosis | Rabbit | - | 1 minutes | 8 days |
| m-phenylenebis (methylamine) | Skin - Severe irritant | Rat | - | 4 hours | 4 hours |

**Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Eyes** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Sensitization**

| Product/ingredient name | Route of exposure | Species | Result |
|---|---|---|---|
| m-phenylenebis (methylamine) | skin | Mouse | Sensitizing |

**Conclusion/Summary**

**Skin** : There are no data available on the mixture itself.

**Respiratory** : There are no data available on the mixture itself.

**Mutagenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Carcinogenicity**

**Conclusion/Summary** : There are no data available on the mixture itself.

**Classification**

| Product/ingredient name | OSHA | IARC | NTP |
|---|---|---|---|
| xylene | - | 3 | - |
| ethylbenzene | - | 2B | - |
| toluene | - | 3 | - |

**Carcinogen Classification code:**

# Section 11. Toxicological information

**IARC: 1, 2A, 2B, 3, 4**
**NTP: Known to be a human carcinogen; Reasonably anticipated to be a human carcinogen**
**OSHA: +**
**Not listed/not regulated: -**

## Reproductive toxicity

**Conclusion/Summary** : There are no data available on the mixture itself.

## Teratogenicity

**Conclusion/Summary** : There are no data available on the mixture itself.

## Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|---|---|---|---|
| xylene | Category 3 | - | Respiratory tract irritation |
| 2-methylpropan-1-ol | Category 3 | - | Respiratory tract irritation |
| | Category 3 | | Narcotic effects |
| toluene | Category 3 | - | Narcotic effects |

## Specific target organ toxicity (repeated exposure)

| Name | Category | Route of exposure | Target organs |
|---|---|---|---|
| ethylbenzene | Category 2 | - | hearing organs |
| toluene | Category 2 | - | - |

**Target organs** : Contains material which causes damage to the following organs: blood, liver, heart, brain.
Contains material which may cause damage to the following organs: kidneys, lungs, the nervous system, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), ears, eye, lens or cornea.

## Aspiration hazard

| Name | Result |
|---|---|
| xylene | ASPIRATION HAZARD - Category 1 |
| ethylbenzene | ASPIRATION HAZARD - Category 1 |
| toluene | ASPIRATION HAZARD - Category 1 |

## Information on the likely routes of exposure

### Potential acute health effects

**Eye contact** : Causes serious eye damage.
**Inhalation** : Harmful if inhaled. May cause respiratory irritation.
**Skin contact** : Causes severe burns. Harmful in contact with skin. Defatting to the skin. May cause an allergic skin reaction.
**Ingestion** : Harmful if swallowed.

### Over-exposure signs/symptoms

**Eye contact** : Adverse symptoms may include the following:
pain
watering
redness

# Section 11. Toxicological information

**Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced fetal weight
increase in fetal deaths
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
dryness
cracking
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

## Delayed and immediate effects and also chronic effects from short and long term exposure

**Conclusion/Summary** : There are no data available on the mixture itself. Trimethoxysilanes are capable of forming methanol if hydrolyzed or ingested. If swallowed, methanol may be harmful or fatal or cause blindness. This product either contains formaldehyde or is capable of releasing formaldehyde above 0.5 ppm under certain conditions. Formaldehyde is a known cancer hazard, a skin sensitizer and a respiratory sensitizer. Exposure to component solvent vapor concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Solvents may cause some of the above effects by absorption through the skin. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. If splashed in the eyes, the liquid may cause irritation and reversible damage. Ingestion may cause nausea, diarrhea and vomiting. This takes into account, where known, delayed and immediate effects and also chronic effects of components from short-term and long-term exposure by oral, inhalation and dermal routes of exposure and eye contact. Exposure to amine vapor has been reported to cause transient corneal edema described as blue haze, halo effect, foggy or blurred vision for several hours. This condition is typically temporary and does not cause permanent visual effects. When the proper eye protection specified in Section 8 is worn, exposure is significantly reduced and the condition has not been observed.

### Short term exposure

**Potential immediate effects** : There are no data available on the mixture itself.

**Potential delayed effects** : There are no data available on the mixture itself.

### Long term exposure

**Potential immediate effects** : There are no data available on the mixture itself.

**Potential delayed effects** : There are no data available on the mixture itself.

# Section 11. Toxicological information

## Potential chronic health effects

**General** : May cause damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : Suspected of damaging fertility or the unborn child.

## Numerical measures of toxicity

### Acute toxicity estimates

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapors) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|---|---|---|---|---|---|
| PHENGUARD 610/780/930/935/940 HARDENER | 1621.4 | 1242.7 | 59012.3 | 21.5 | 2 |
| xylene | 4300 | 1700 | N/A | 11 | 1.5 |
| 3-aminopropyldiethylamine | 830 | 524 | N/A | N/A | N/A |
| benzyl alcohol | 1230 | 2000 | N/A | N/A | 1.5 |
| 2-methylpropan-1-ol | 2830 | 2460 | N/A | 24.6 | N/A |
| m-phenylenebis(methylamine) | 930 | 2500 | 4500 | N/A | N/A |
| ethylbenzene | 3500 | 17800 | N/A | 17.8 | 1.5 |
| N-(3-(trimethoxysilyl)propyl)ethylenediamine | 2413 | N/A | N/A | 11 | 1.5 |
| salicylic acid | 891 | N/A | N/A | N/A | N/A |
| toluene | 5580 | 8390 | N/A | 49 | N/A |

# Section 12. Ecological information

## Toxicity

| Product/ingredient name | Result | Species | Exposure |
|---|---|---|---|
| 3-aminopropyldiethylamine | Acute EC50 30.2 mg/l | Daphnia | 48 hours |
| | Acute EC50 146.6 mg/l | Fish | 96 hours |
| 2-methylpropan-1-ol | Acute EC50 1100 mg/l | Daphnia | 48 hours |
| ethylbenzene | Acute EC50 1.8 mg/l Fresh water | Daphnia | 48 hours |
| | Chronic NOEC 1 mg/l Fresh water | Daphnia - Ceriodaphnia dubia | - |
| salicylic acid | Acute EC50 1147.57 mg/l Fresh water | Daphnia - Daphnia longispina - Neonate | 48 hours |
| | Chronic NOEC 5.6 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 21 days |

## Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|---|---|---|---|---|
| 3-aminopropyldiethylamine | OECD 301A | 90 % - Readily - 28 days | - | - |
| ethylbenzene | - | 79 % - Readily - 10 days | - | - |

# Section 12. Ecological information

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|---|---|---|---|
| xylene | - | - | Readily |
| 3-aminopropyldiethylamine | - | - | Readily |
| benzyl alcohol | - | - | Readily |
| ethylbenzene | - | - | Readily |
| toluene | - | - | Readily |

## Bioaccumulative potential

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| xylene | 3.12 | 7.4 to 18.5 | low |
| benzyl alcohol | 0.87 | - | low |
| 2-methylpropan-1-ol | 1 | - | low |
| m-phenylenebis(methylamine) | 0.18 | 2.69 | low |
| ethylbenzene | 3.6 | 79.43 | low |
| salicylic acid | 2.21 to 2.26 | - | low |
| toluene | 2.73 | 8.32 | low |

## Mobility in soil

**Soil/water partition coefficient ($K_{OC}$)** : Not available.

# Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Disposal should be in accordance with applicable regional, national and local laws and regulations.**

**Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures**

# 14. Transport information

| | DOT | IMDG | IATA |
|---|---|---|---|
| **UN number** | UN3470 | UN3470 | UN3470 |
| **UN proper shipping name** | PAINT, CORROSIVE, FLAMMABLE | PAINT, CORROSIVE, FLAMMABLE | PAINT, CORROSIVE, FLAMMABLE |
| **Transport hazard class (es)** | 8 (3) | 8 (3) | 8 (3) |
| **Packing group** | II | II | II |
| **Environmental hazards** | No. | No. | No. |
| **Marine pollutant substances** | Not applicable. | Not applicable. | Not applicable. |
| **Product RQ (lbs)** | 425.73 | Not applicable. | Not applicable. |
| **RQ substances** | (xylene, ethylbenzene) | Not applicable. | Not applicable. |

**Additional information**

**DOT** : Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

**IMDG** : None identified.

**IATA** : None identified.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to IMO instruments** : Not applicable.

# Section 15. Regulatory information

**United States**

**United States inventory (TSCA 8b)** : All components are active or exempted.

**SARA 302/304**

**SARA 304 RQ** : Not applicable.

**Composition/information on ingredients**

No products were found.

**SARA 311/312**

**Classification** : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (dermal) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION - Category 1
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2

# Section 15. Regulatory information

TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
HNOC - Defatting irritant

## Composition/information on ingredients

| Name | % | Classification |
|---|---|---|
| xylene | ≥20 - ≤25 | FLAMMABLE LIQUIDS - Category 3<br>ACUTE TOXICITY (dermal) - Category 4<br>ACUTE TOXICITY (inhalation) - Category 4<br>SKIN IRRITATION - Category 2<br>EYE IRRITATION - Category 2A<br>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3<br>ASPIRATION HAZARD - Category 1 |
| 3-aminopropyldiethylamine | ≥10 - ≤20 | FLAMMABLE LIQUIDS - Category 3<br>ACUTE TOXICITY (oral) - Category 4<br>ACUTE TOXICITY (dermal) - Category 3<br>SKIN CORROSION - Category 1<br>SERIOUS EYE DAMAGE - Category 1<br>SKIN SENSITIZATION - Category 1B |
| benzyl alcohol | ≥10 - ≤15 | ACUTE TOXICITY (oral) - Category 4<br>ACUTE TOXICITY (dermal) - Category 4<br>ACUTE TOXICITY (inhalation) - Category 4<br>EYE IRRITATION - Category 2A |
| 2-methylpropan-1-ol | ≥5.0 - ≤10 | FLAMMABLE LIQUIDS - Category 3<br>SKIN IRRITATION - Category 2<br>SERIOUS EYE DAMAGE - Category 1<br>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3<br>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3<br>HNOC - Defatting irritant |
| m-phenylenebis(methylamine) | ≥1.0 - ≤5.0 | ACUTE TOXICITY (oral) - Category 4<br>ACUTE TOXICITY (inhalation) - Category 4<br>SKIN CORROSION - Category 1B<br>SERIOUS EYE DAMAGE - Category 1<br>SKIN SENSITIZATION - Category 1B |
| ethylbenzene | ≥1.0 - ≤4.4 | FLAMMABLE LIQUIDS - Category 2<br>ACUTE TOXICITY (inhalation) - Category 4<br>CARCINOGENICITY - Category 2<br>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2<br>ASPIRATION HAZARD - Category 1<br>HNOC - Defatting irritant |
| N-(3-(trimethoxysilyl)propyl) ethylenediamine | ≥1.0 - ≤4.2 | ACUTE TOXICITY (inhalation) - Category 4<br>SERIOUS EYE DAMAGE - Category 1<br>SKIN SENSITIZATION - Category 1B |
| salicylic acid | <1.0 | COMBUSTIBLE DUSTS<br>ACUTE TOXICITY (oral) - Category 4<br>SERIOUS EYE DAMAGE - Category 1 |

# Section 15. Regulatory information

| | | |
|---|---|---|
| toluene | <1.0 | TOXIC TO REPRODUCTION - Category 2<br>FLAMMABLE LIQUIDS - Category 2<br>SKIN IRRITATION - Category 2<br>TOXIC TO REPRODUCTION - Category 2<br>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3<br>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2<br>ASPIRATION HAZARD - Category 1<br>HNOC - Defatting irritant |

**SARA 313**

**Supplier notification** :

| Chemical name | CAS number | Concentration |
|---|---|---|
| xylene | 1330-20-7 | 10 - 30 |
| ethylbenzene | 100-41-4 | 1 - 5 |

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

**Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.**

**California Prop. 65**

⚠ **WARNING**: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

# Section 16. Other information

**Hazardous Material Information System (U.S.A.)**

**Health** : 3 * **Flammability** : 3 **Physical hazards** : 1

( * ) - Chronic effects

**Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.**

**The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.**

**National Fire Protection Association (U.S.A.)**

**Health** : 3 **Flammability** : 3 **Instability** : 1

**Date of previous issue** : **2/8/2022**

**Organization that prepared the SDS** : EHS

**Key to abbreviations** : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available

# Section 16. Other information

SGG = Segregation Group
UN = United Nations

**Indicates information that has changed from previously issued version.**

**Disclaimer**

*The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.*