# SAFETY DATA SHEET

**THE DOW CHEMICAL COMPANY***

**Product name: PARALOID™ AT-410 Resin**

**Issue Date:** 08/05/2019
**Print Date:** 01/08/2020

THE DOW CHEMICAL COMPANY* encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. IDENTIFICATION

**Product name:** PARALOID™ AT-410 Resin

**Recommended use of the chemical and restrictions on use**
**Identified uses:** This product is used in coatings, textiles, binders and adhesives.

**COMPANY IDENTIFICATION**
THE DOW CHEMICAL COMPANY*
Agent for Rohm and Haas Chemicals LLC
400 ARCOLA ROAD
COLLEGEVILLE PA 19426-2914
UNITED STATES

**Customer Information Number:** 800-258-2436
SDSQuestion@dow.com

**EMERGENCY TELEPHONE NUMBER**
**24-Hour Emergency Contact:** 1 800 424 9300
**Local Emergency Contact:** 800-424-9300

## 2. HAZARDS IDENTIFICATION

**Hazard classification**
GHS classification in accordance with 29 CFR 1910.1200
Flammable liquids - Category 3
Skin sensitisation - Category 1
Reproductive toxicity - Category 2
Specific target organ toxicity - single exposure - Category 3

**Label elements**
**Hazard pictograms**

Signal word: **WARNING!**

**Hazards**
Flammable liquid and vapour.
May cause an allergic skin reaction.
May cause drowsiness or dizziness.
Suspected of damaging fertility or the unborn child.

**Precautionary statements**

**Prevention**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ eye protection/ face protection.
Use personal protective equipment as required.

**Response**
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
If skin irritation or rash occurs: Get medical advice/ attention.
Wash contaminated clothing before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

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

**Disposal**
Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**
No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Chemical nature:** Polymers, solvent based
This product is a mixture.

| Component | CASRN | Concentration |
|---|---|---|

| | | |
|---|---|---|
| Styrene/acrylic copolymer | Not hazardous | >= 72.0 - 74.0 % |
| Individual residual monomers | Not required | <= 0.8 % |
| Styrene | 100-42-5 | <= 0.4 % |
| Methyl amyl ketone | 110-43-0 | >= 26.0 - 28.0 % |
| Hydroxyethyl methacrylate | 868-77-9 | <= 0.3 % |
| Toluene | 108-88-3 | < 1.0 % |

## 4. FIRST AID MEASURES

**Description of first aid measures**
**Inhalation:** Move to fresh air. Give artificial respiration if breathing has stopped. In case of shortness of breath, give oxygen. Consult a physician.

**Skin contact:** Remove contaminated clothing. Wash off with soap and plenty of water. If symptoms persist, call a physician. Do not take clothing home to be laundered.

**Eye contact:** Rinse with plenty of water. If eye irritation persists, consult a specialist.

**Ingestion:** Drink 1 or 2 glasses of water. Consult a physician. If vomiting occurs spontaneously, keep airway clear. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed:**
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**
**Notes to physician:** Treatment should be directed at preventing absorption, administering to symptoms (if they occur), and providing supportive therapy.

## 5. FIREFIGHTING MEASURES

**Extinguishing media**

**Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide..

**Unsuitable extinguishing media:** No data available

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** No data available

**Unusual Fire and Explosion Hazards:** Vapors can travel to a source of ignition and flash back.. Heated material can form flammable or explosive vapors with air.. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.. During a fire, irritating and highly toxic gases and/or fumes may be generated during combustion or decomposition..

**Advice for firefighters**

**Fire Fighting Procedures:** EXPLOSION HAZARD. Fight advanced fires from a protected location.. Cool closed containers exposed to fire with water spray.. Remain upwind.. Avoid breathing smoke..

**Special protective equipment for firefighters:** In the event of fire, wear self-contained breathing apparatus..

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations. If exposed to material during clean-up operations, see SECTION 4, First Aid Measures, for actions to follow.

**Environmental precautions:** WARNING: KEEP SPILLS AND CLEANING RUNOFFS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER.

**Methods and materials for containment and cleaning up:** Eliminate all ignition sources. Evacuate personnel to safe areas. Ventilate the area. Floor may be slippery; use care to avoid falling. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up or vacuum up spillage and collect in suitable container for disposal. No sparking tools should be used. Avoid breathing vapor. NOTE: Spills on porous surfaces can contaminate groundwater.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Vapors can be evolved when material is heated during processing operations. See SECTION 8, Exposure Controls/Personal Protection, for types of ventilation required. Use non-sparking tools and grounding cables when transferring. Wash after handling and shower at end of work period. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied.

**Conditions for safe storage:** Avoid temperature extremes during storage; ambient temperature preferred. Store away from excessive heat (e.g. steampipes,radiators), from sources of ignition and from reactive materials. Material can burn; limit indoor storage to approved areas equipped with automatic sprinklers. Store out of direct sunlight in a cool place. Keep containers tightly closed in a cool, well-ventilated place. Avoid all ignition sources. Ground all metal containers during storage and handling.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

| Component | Regulation | Type of listing | Value |
|---|---|---|---|
| Styrene | OSHA Z-1 | | See Further information |
| | Further information: (2): See Table Z-2 | | |
| | OSHA Z-2 | TWA | 100 ppm |
| | Further information: Z37.15-1969 | | |
| | OSHA Z-2 | CEIL | 200 ppm |
| | Further information: Z37.15-1969 | | |
| | OSHA Z-2 | Peak | 600 ppm |
| | Further information: Z37.15-1969 | | |
| | ACGIH | TWA | 20 ppm |
| | Further information: CNS impair: Central Nervous System impairment; URT irr: Upper Respiratory Tract irritation; peripheral neuropathy: Peripheral neuropathy; (): Adopted values or notations enclosed are those for which changes are proposed in the NIC; See Notice of Intended Changes (NIC); BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section); A4: Not classifiable as a human carcinogen | | |
| | ACGIH | STEL | 40 ppm |
| | Further information: CNS impair: Central Nervous System impairment; URT irr: Upper Respiratory Tract irritation; peripheral neuropathy: Peripheral neuropathy; (): Adopted values or notations enclosed are those for which changes are proposed in the NIC; See Notice of Intended Changes (NIC); BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section); A4: Not classifiable as a human carcinogen | | |
| | OSHA P0 | TWA | 215 mg/m3 50 ppm |
| | OSHA P0 | STEL | 425 mg/m3 100 ppm |
| Methyl amyl ketone | ACGIH | TWA | 50 ppm |
| | Further information: eye irr: Eye irritation; skin irr: Skin irritation | | |
| | OSHA Z-1 | TWA | 465 mg/m3 100 ppm |
| | Further information: (b): The value in mg/m3 is approximate. | | |
| Hydroxyethyl methacrylate | Dow IHG | TWA | 1 ppm |
| | Dow IHG | STEL | 3 ppm |
| Toluene | ACGIH | TWA | 20 ppm |
| | Further information: visual impair: Visual impairment; female repro: Female reproductive; pregnancy loss: Pregnancy loss; BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section); A4: Not classifiable as a human carcinogen | | |
| | OSHA Z-1 | | See Further information |
| | Further information: (2): See Table Z-2 | | |
| | OSHA Z-2 | TWA | 200 ppm |
| | Further information: Z37.12-1967 | | |
| | OSHA Z-2 | CEIL | 300 ppm |
| | Further information: Z37.12-1967 | | |
| | OSHA Z-2 | Peak | 500 ppm |
| | Further information: Z37.12-1967 | | |

**Biological occupational exposure limits**

| Components | CAS-No. | Control parameters | Biological specimen | Sampling time | Permissible concentration | Basis |
|---|---|---|---|---|---|---|
| Styrene | 100-42-5 | Mandelic acid plus phenylglyoxylic acid | Urine | End of shift (As soon as possible | 400 mg/g Creatinine | ACGIH BEI |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | after exposure ceases) | | |
| | | Styrene | Urine | End of shift (As soon as possible after exposure ceases) | 40 µg/l | ACGIH BEI |
| Toluene | 108-88-3 | Toluene | In blood | Prior to last shift of workweek | 0.02 mg/l | ACGIH BEI |
| | | Toluene | Urine | End of shift (As soon as possible after exposure ceases) | 0.03 mg/l | ACGIH BEI |
| | | o-Cresol | Urine | End of shift (As soon as possible after exposure ceases) | 0.3 mg/g Creatinine | ACGIH BEI |

**Exposure controls**
**Engineering controls:** Use explosion-proof local exhaust ventilation with a minimum capture velocity of 100 ft/min (0.5 m/sec) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

**Protective measures:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**Individual protection measures**
**Eye/face protection:** Chemical resistant goggles must be worn. Eye protection worn must be compatible with respiratory protection system employed.
**Skin protection**
**Hand protection:** Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): Nitrile rubber butyl-rubber Solvent-resistant gloves Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.
**Other protection:** Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact. Where splashing is possible, full chemically resistant protective clothing (e.g. acid suit) and boots are required.

**Respiratory protection:** A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Up to 10 times the exposure limit: Wear a properly fitted NIOSH approved (or equivalent) half-mask, air-purifying respirator. Up to 1000 ppm organic vapor: Wear a properly fitted NIOSH approved (or equivalent) full-facepiece, air-purifying respirator, OR full-facepiece, airline respirator in the pressure demand mode. Above 1000 ppm organic vapor or Unknown: Wear a properly fitted NIOSH approved (or equivalent) self-contained breathing appartus in the pressure demand mode, OR full-facepiece, airline respirator in the pressure demand mode with emergency escape provision. Air-purifying respirators should be equipped with NIOSH approved (or equivalent) organic vapor cartridges and N95 filters. If oil mist is present, use R95 or P95 filters.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Appearance** | |
| **Physical state** | liquid |
| **Color** | Clear to hazy yellow |
| **Odor** | Fruity |
| **Odor Threshold** | No data available |
| **pH** | Not applicable |
| **Melting point/range** | -35.00 °C ( -31.00 °F) Methyl n-amyl ketone |
| **Freezing point** | No data available |
| **Boiling point (760 mmHg)** | 151.00 °C ( 303.80 °F) Methyl n-amyl ketone |
| **Flash point** | **closed cup** 35.00 °C ( 95.00 °F) *Tag closed cup* |
| **Evaporation Rate (Butyl Acetate = 1)** | 0.40 Methyl amyl ketone |
| **Flammability (solid, gas)** | Not Applicable |
| **Lower explosion limit** | 1.10 % vol Methyl amyl ketone |
| **Upper explosion limit** | 7.90 % vol Methyl amyl ketone |
| **Vapor Pressure** | 9.0000000 mmHg at 20.00 °C (68.00 °F) estimated |
| **Relative Vapor Density (air = 1)** | 3.9300 at 151.00 °C (303.80 °F) Methyl amyl ketone |
| **Relative Density (water = 1)** | 1.0100 |
| **Water solubility** | practically insoluble |
| **Partition coefficient: n-octanol/water** | No data available |
| **Auto-ignition temperature** | 393.00 °C (739.40 °F) Methyl amyl ketone |
| **Decomposition temperature** | No data available |
| **Dynamic Viscosity** | 6,000.000 mPa.s maximum |
| **Kinematic Viscosity** | No data available |
| **Explosive properties** | No data available |
| **Oxidizing properties** | No data available |
| **Molecular weight** | No data available |
| **Percent volatility** | 26.00 - 28.00 % |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

## 10. STABILITY AND REACTIVITY

**Reactivity:** No data available

**Chemical stability:** No data available

**Possibility of hazardous reactions:** This material is considered stable. However, avoid contact with ignition sources (e.g. sparks, open flame, heated surfaces).
Product will not undergo polymerization.

**Conditions to avoid:** No data available

**Incompatible materials:** Avoid contact with the following: Strong oxidizing agents Strong acids and strong bases

**Hazardous decomposition products:** There are no known hazardous decomposition products for this material..

## 11. TOXICOLOGICAL INFORMATION

*Toxicological information appears in this section when such data is available.*

**Acute toxicity**

**Acute oral toxicity**
LD50, Rat, >5,000 mg/kg

**Acute dermal toxicity**
LD50, Rabbit, >5,000 mg/kg

**Acute inhalation toxicity**
Product test data not available. Refer to component data.

**Skin corrosion/irritation**
slight irritation

**Serious eye damage/eye irritation**
slight irritation

**Sensitization**
Product test data not available. Refer to component data.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
Product test data not available. Refer to component data.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
Product test data not available. Refer to component data.

**Carcinogenicity**
Product test data not available. Refer to component data.

**Teratogenicity**
Product test data not available. Refer to component data.

**Reproductive toxicity**
Product test data not available. Refer to component data.

**Mutagenicity**
Product test data not available. Refer to component data.

**Aspiration Hazard**
Product test data not available. Refer to component data.

**Additional information**
No data are available for this material. The information shown is based on profiles of compositionally similar materials.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**Styrene**

**Acute inhalation toxicity**
Vapor concentrations are attainable which could be hazardous on single exposure. Excessive exposure may cause irritation to upper respiratory tract (nose and throat). Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

LC50, Rat, 4 Hour, vapour, 11.8 mg/l

**Sensitization**
For skin sensitization:
No relevant data found.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
May cause respiratory irritation.
Route of Exposure: Inhalation
Target Organs: Respiratory Tract

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
In animals, effects have been reported on the following organs:
Central nervous system.
Kidney.
Liver.
Respiratory tract.
Lung effects have been observed in mice following repeated exposure to styrene.
Styrene is reported to have caused hearing loss in laboratory animals. Chronic and intensive styrene exposure is reported to reduce the hearing thresholds in workers.
Some studies in humans allege that repeated exposure to styrene may result in minor, subclinical decreases in the ability to discriminate between colors.

**Carcinogenicity**
An increased incidence of lung tumors was observed in mice from an inhalation study on styrene. The relevance of this finding to humans is uncertain since data from mode of action investigations of mouse lung tumors coupled with other long-term animal studies and epidemiology studies of workers exposed to styrene do not provide a basis to conclude that styrene is carcinogenic.

**Teratogenicity**
Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

**Reproductive toxicity**
In animal studies, did not interfere with reproduction.

**Mutagenicity**
In vitro genetic toxicity studies were inconclusive. Animal genetic toxicity studies were inconclusive

**Aspiration Hazard**
May be fatal if swallowed and enters airways.

**Methyl amyl ketone**

**Acute inhalation toxicity**
Vapor concentrations are attainable which could be hazardous on single exposure. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

Maximum attainable concentration. LC50, Rat, 4 Hour, vapour, > 16.7 mg/l

**Sensitization**
Did not cause allergic skin reactions when tested in humans.
Did not cause allergic skin reactions when tested in guinea pigs.
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
May cause drowsiness or dizziness.
Route of Exposure: Inhalation
Target Organs: Central nervous system

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
In animals, effects have been reported on the following organs:
Central nervous system.
Kidney.
Liver.

**Carcinogenicity**
No relevant data found.

**Teratogenicity**

No relevant data found.

**Reproductive toxicity**
Screening studies suggest that this material does not affect reproduction.

**Mutagenicity**
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**
Aspiration into the lungs may occur during ingestion or vomiting, resulting in rapid absorption and injury to other body systems.

**Hydroxyethyl methacrylate**

**Acute inhalation toxicity**
The LC50 has not been determined.

**Sensitization**
Has caused allergic skin reactions in humans.
Individuals having an allergic skin reaction to this product may have an allergic skin reaction to similar material(s).
Individuals who have had an allergic skin reaction to similar materials may have an allergic skin reaction to this product.
The similar material(s) is/are:
2-Hydroxypropyl methacrylate.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
In animals, effects have been reported on the following organs:
Kidney.

**Carcinogenicity**
Similar material(s) did not cause cancer in laboratory animals.

**Teratogenicity**
Screening studies in animals suggest that this material does not affect fetal development.

**Reproductive toxicity**
In animal studies, did not interfere with reproduction.

**Mutagenicity**
In vitro genetic toxicity studies were negative in some cases and positive in other cases.
Animal genetic toxicity studies were negative.

**Aspiration Hazard**
Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

**Toluene**

**Acute inhalation toxicity**

Symptoms may include headache, dizziness and drowsiness, progressing to incoordination and unconsciousness. Alcohol consumption and exertion may increase the adverse effects of toluene. LC50, Rat, male, 4 Hour, vapour, 25.7 mg/l

LC50, Rat, female, 4 Hour, vapour, 30 mg/l

**Sensitization**
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**
May cause drowsiness or dizziness.
Route of Exposure: Inhalation
Target Organs: Central nervous system

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**
In animals, effects have been reported on the following organs:
central nervous system (CNS) effects
Excessive exposure may cause neurologic signs and symptoms.
Toluene has caused hearing loss in laboratory animals upon exposure to high concentrations.
Intentional misuse by deliberately inhaling toluene may cause nervous system damage, hearing loss, liver and kidney effects and death.

**Carcinogenicity**
Did not cause cancer in laboratory animals.

**Teratogenicity**
In laboratory animals, toluene has been toxic to the fetus at doses toxic to the mother; it has caused birth defects in mice when administered orally, but not by inhalation.

**Reproductive toxicity**
In animal studies, did not interfere with reproduction.

**Mutagenicity**
The majority and most reliable of the many genetic toxicity studies on toluene, both in vitro and in animals, indicate that it is not genetically toxic.

**Aspiration Hazard**
May be fatal if swallowed and enters airways.

**Carcinogenicity**

| **Component** | **List** | **Classification** |
|---|---|---|
| **Styrene** | IARC | Group 2A: Probably carcinogenic to humans |
| | US NTP | Reasonably anticipated to be a human carcinogen |

## 12. ECOLOGICAL INFORMATION

*Ecotoxicological information appears in this section when such data is available.*

**Toxicity**

**Acute toxicity to fish**
LC50, Rainbow trout (Salmo gairdneri), 96 Hour, >500 mg/l, OECD Test Guideline 203 or Equivalent

LC50, Pimephales promelas (fathead minnow), 96 Hour, >500 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**
LC50, Daphnia magna (Water flea), 48 Hour, 22 mg/l, OECD Test Guideline 202 or Equivalent

**Persistence and degradability**
**Biodegradability:** Not readily biodegraded.

**Bioaccumulative potential**

**Styrene**
**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient: n-octanol/water(log Pow):** 2.95 Measured
**Bioconcentration factor (BCF):** 13.5 Fish Measured

**Methyl amyl ketone**
**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient: n-octanol/water(log Pow):** 1.98 Measured

**Hydroxyethyl methacrylate**
**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient: n-octanol/water(log Pow):** 0.42 at 25 °C
**Bioconcentration factor (BCF):** 1.34 - 1.54 Fish Calculated.

**Toluene**
**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient: n-octanol/water(log Pow):** 2.73 Measured
**Bioconcentration factor (BCF):** 13.2 - 90 Fish Measured

**Mobility in soil**

**Styrene**
Potential for mobility in soil is low (Koc between 500 and 2000).
**Partition coefficient (Koc):** 520 - 920 Estimated.

**Methyl amyl ketone**
Potential for mobility in soil is very high (Koc between 0 and 50).
**Partition coefficient (Koc):** 24 - 60 Estimated.

**Hydroxyethyl methacrylate**
No relevant data found.

**Toluene**
Potential for mobility in soil is very high (Koc between 0 and 50).
**Partition coefficient (Koc):** 37 - 178 Estimated.

## 13. DISPOSAL CONSIDERATIONS

**Disposal methods:** Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.
(See 40 CFR 268)

**Contaminated packaging:** Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. TRANSPORT INFORMATION

**DOT**

| | |
|---|---|
| **Proper shipping name** | Resin solution |
| **UN number** | UN 1866 |
| **Class** | 3 |
| **Packing group** | III |

**Classification for SEA transport (IMO-IMDG):**

| | |
|---|---|
| **Proper shipping name** | RESIN SOLUTION |
| **UN number** | UN 1866 |
| **Class** | 3 |
| **Packing group** | III |
| **Marine pollutant** | No |
| **Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code** | Consult IMO regulations before transporting ocean bulk |

**Classification for AIR transport (IATA/ICAO):**

| | |
|---|---|
| **Proper shipping name** | Resin solution |
| **UN number** | UN 1866 |
| **Class** | 3 |
| **Packing group** | III |

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## 15. REGULATORY INFORMATION

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

Flammable (gases, aerosols, liquids, or solids)
Respiratory or skin sensitisation
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**
The following components are subject to reporting levels established by SARA Title III, Section 313:

| **Components** | **CASRN** |
|---|---|
| Styrene | 100-42-5 |

**Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103**
Calculated RQ exceeds reasonably attainable upper limit.

| **Components** | **CASRN** | **RQ (RCRA Code)** |
|---|---|---|
| Toluene | 108-88-3 | 1000 lbs RQ |
| Toluene | 108-88-3 | 100 lbs RQ (F005) |

**Pennsylvania**
Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.
The following chemicals are listed because of the additional requirements of Pennsylvania law:

| **Components** | **CASRN** |
|---|---|
| Benzene | 71-43-2 |

**California Prop. 65**
WARNING: This product can expose you to chemicals including Styrene, which is/are known to the State of California to cause cancer, and Toluene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

**United States TSCA Inventory (TSCA)**
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

## 16. OTHER INFORMATION

**Hazard Rating System**
**HMIS**

| Health | Flammability | Physical Hazard |
|---|---|---|
| 1* | 3 | 0 |

* = Chronic Effects (See Hazards Identification)

**Revision**
Identification Number: 10077748 / 1001 / Issue Date: 08/05/2019 / Version: 3.2
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

| | |
|---|---|
| ACGIH | USA. ACGIH Threshold Limit Values (TLV) |
| ACGIH BEI | ACGIH - Biological Exposure Indices (BEI) |
| CEIL | Acceptable ceiling concentration |
| Dow IHG | Dow Industrial Hygiene Guideline |
| OSHA P0 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| OSHA Z-1 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| OSHA Z-2 | USA. Occupational Exposure Limits (OSHA) - Table Z-2 |
| Peak | Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift |
| STEL | Short term exposure limit |
| TWA | Time weighted average |

**Full text of other abbreviations**

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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