

| Chemical name | Common name and synonyms | CAS number | % |
|--|--------------------------|------------|----------|
| Zinc Chloride | | 7646-85-7 | < 0.1 |
| Other components below reportable levels | | | 90 - 100 |

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

| | |
|---|---|
| Inhalation | If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist. |
| Skin contact | Rinse skin with water/shower. Get medical attention if irritation develops and persists. |
| Eye contact | Rinse with water. Get medical attention if irritation develops and persists. |
| Ingestion | Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately. |
| Most important symptoms/effects, acute and delayed | Direct contact with eyes may cause temporary irritation. |
| Indication of immediate medical attention and special treatment needed | Treat symptomatically. |
| General information | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

5. Fire-fighting measures

| | |
|--|---|
| Suitable extinguishing media | 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. |
| 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. 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

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|---|--|
| Precautions for safe handling | Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices. |
| Conditions for safe storage, including any incompatibilities | 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

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

| Components | Type | Value |
|--|------|-------|
| VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4) | STEL | 5 ppm |
| | TWA | 1 ppm |

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

| Components | Type | Value | Form |
|-----------------------------------|------|-------------------|-------|
| Phenol (CAS 108-95-2) | PEL | 19 mg/m3 5 ppm | |
| White Mineral Oil (CAS 8042-47-5) | PEL | 5 mg/m3 | Mist. |
| Zinc Chloride (CAS 7646-85-7) | PEL | 1 mg/m3 | Fume. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Form |
|--|------|---------|---------------------|
| Phenol (CAS 108-95-2) | TWA | 5 ppm | |
| VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4) | TWA | 1 ppm | |
| White Mineral Oil (CAS 8042-47-5) | TWA | 5 mg/m3 | Inhalable fraction. |
| Zinc Chloride (CAS 7646-85-7) | STEL | 2 mg/m3 | Fume. |
| | TWA | 1 mg/m3 | Fume. |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value | Form |
|-----------------------------------|---------|----------------------|-------|
| Phenol (CAS 108-95-2) | Ceiling | 60 mg/m3 15.6 ppm | |
| | TWA | 19 mg/m3 5 ppm | |
| | STEL | 10 mg/m3 | Mist. |
| White Mineral Oil (CAS 8042-47-5) | TWA | 5 mg/m3 | Mist. |
| | STEL | 2 mg/m3 | Fume. |
| Zinc Chloride (CAS 7646-85-7) | TWA | 1 mg/m3 | Fume. |

Biological limit values

ACGIH Biological Exposure Indices

| Components | Value | Determinant | Specimen | Sampling Time |
|-----------------------|----------|------------------------|---------------------|---------------|
| Phenol (CAS 108-95-2) | 250 mg/g | Phenol with hydrolysis | Creatinine in urine | * |

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

Exposure guidelines

US - California OELs: Skin designation

Phenol (CAS 108-95-2) Can be absorbed through the skin.
 VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Phenol (CAS 108-95-2) Skin designation applies.

US - Tennessee OELs: Skin designation

Phenol (CAS 108-95-2) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Phenol (CAS 108-95-2) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

Phenol (CAS 108-95-2) Can be absorbed through the skin.

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

Phenol (CAS 108-95-2) 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.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear suitable protective clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations 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.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Liquid.

Color White

Odor Slight.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -54.4 °F (-48 °C) estimated

Initial boiling point and boiling range 721.4 °F (383 °C) estimated

Flash point 460.4 °F (238.0 °C) estimated

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 0.00003 hPa estimated

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Other information

Density 8.74 lbs/gal estimated

Explosive properties Not explosive.

| | |
|-----------------------------|----------------------------|
| Flammability class | Combustible IIIB estimated |
| Oxidizing properties | Not oxidizing. |
| Specific gravity | 1.05 estimated |
| VOC | 0.03 % estimated |

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 oxidizing agents. |
| Hazardous decomposition products | No hazardous decomposition products are known. |

11. Toxicological information

Information on likely routes of exposure

| | |
|---------------------|--|
| Inhalation | Prolonged inhalation may be harmful. |
| Skin contact | No adverse effects due to skin contact are expected. |
| Eye contact | Direct contact with eyes may cause temporary irritation. |
| Ingestion | Expected to be a low ingestion hazard. |

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Not known.

| Components | Species | Test Results |
|-------------------------------|----------------|---------------------|
| Phenol (CAS 108-95-2) | | |
| <u>Acute</u> | | |
| Dermal | | |
| LD50 | Rat | 669 mg/kg |
| Zinc Chloride (CAS 7646-85-7) | | |
| <u>Acute</u> | | |
| Oral | | |
| LD50 | Rat | 350 mg/kg |

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

| | |
|----------------------------------|---|
| Respiratory sensitization | Not a respiratory sensitizer. |
| Skin sensitization | This product is not expected to cause skin sensitization. |

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

| | |
|--|---|
| Phenol (CAS 108-95-2) | 3 Not classifiable as to carcinogenicity to humans. |
| VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4) | 1 Carcinogenic to humans. |
| White Mineral Oil (CAS 8042-47-5) | 3 Not classifiable as to carcinogenicity to humans. |

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

| | |
|--|--------|
| VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4) | Cancer |
|--|--------|

US. National Toxicology Program (NTP) Report on Carcinogens

| | |
|--|-------------------------------|
| VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4) | Known To Be Human Carcinogen. |
|--|-------------------------------|

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 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 |
|-------------------------------|---------|--|
| Phenol (CAS 108-95-2) | | |
| Aquatic | | |
| Crustacea | EC50 | Water flea (Daphnia obtusa) 4.7 - 6.4 mg/l, 48 hours |
| Fish | LC50 | Asiatic knifefish (Notopterus notopterus) 8 - 8.25 mg/l, 96 hours |
| Zinc Chloride (CAS 7646-85-7) | | |
| Aquatic | | |
| Crustacea | EC50 | American or virginia oyster (Crassostrea virginica) 0.1511 - 0.2782 mg/l, 48 hours |
| Fish | LC50 | Rainbow trout,donaldson trout (Oncorhynchus mykiss) 0.101 - 0.197 mg/l, 96 hours |

Persistence and degradability No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential

| Partition coefficient n-octanol / water (log Kow) | |
|---|------|
| Phenol | 1.46 |

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 not known to be 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.

CERCLA Hazardous Substance List (40 CFR 302.4)

Phenol (CAS 108-95-2) Listed.
 VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4) Listed.
 Zinc Chloride (CAS 7646-85-7) Listed.

SARA 304 Emergency release notification

Phenol (CAS 108-95-2) 1000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4) Cancer
 Central nervous system
 Liver
 Blood
 Flammability

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

| Chemical name | CAS number | Reportable quantity (pounds) | Threshold planning quantity (pounds) | Threshold planning quantity, lower value (pounds) | Threshold planning quantity, upper value (pounds) |
|---------------|------------|------------------------------|--------------------------------------|---|---|
| Phenol | 108-95-2 | 1000 | | 500 | 10000 |

SARA 311/312 Hazardous chemical

Yes
 Classified hazard categories Acute toxicity (any route of exposure)

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|------------------------------|------------|----------|
| VINYL CHLORIDE MONOMER (VCM) | 75-01-4 | < 0.1 |

Other federal regulations

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

Phenol (CAS 108-95-2)
 VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4)

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

VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4)

Safe Drinking Water Act (SDWA) Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Phenol (CAS 108-95-2) Low priority

US state regulations

California Proposition 65



WARNING: This product can expose you to VINYL CHLORIDE MONOMER (VCM), which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4) Listed: February 27, 1987

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Phenol (CAS 108-95-2)
 VINYL CHLORIDE MONOMER (VCM) (CAS 75-01-4)

International Inventories

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

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

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

16. Other information, including date of preparation or last revision

Issue date 04-13-2016
Revision date 11-01-2017
Version # 02
HMIS® ratings Health: 1
 Flammability: 0
 Physical hazard: 0

NFPA ratings



Disclaimer

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Revision information

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