



EUCLID CHEMICAL

Version: 1.0
Revision Date: 12/01/2016

This is a kit that contains the following components:
TAMMS AG-400 TOPCOAT 1:3 PART A
TAMMS AG-400 TOPCOAT1:3 PART B



SAFETY DATA SHEET

1. Identification

Product identifier: TAMMS AG-400 TOPCOAT 1:3 PART A
Product Code: TD2439404000

Recommended use and restriction on use

Recommended use: Coatings
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

EUCLID CHEMICAL COMPANY
19218 REDWOOD ROAD
CLEVELAND OH 44110
US

Contact person: EH&S Department
Telephone: 216-531-9222
Emergency telephone number: 1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Health Hazards

| | |
|---|------------|
| Acute toxicity (Inhalation - vapor) | Category 4 |
| Acute toxicity (Inhalation - dust and mist) | Category 4 |
| Respiratory sensitizer | Category 1 |
| Skin sensitizer | Category 1 |

Unknown toxicity - Health

| | |
|--|--------|
| Acute toxicity, oral | 0 % |
| Acute toxicity, dermal | 0 % |
| Acute toxicity, inhalation, vapor | 99.3 % |
| Acute toxicity, inhalation, dust or mist | 0.7 % |

Unknown toxicity - Environment

| | |
|--|-------|
| Acute hazards to the aquatic environment | 100 % |
| Chronic hazards to the aquatic environment | 100 % |

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Harmful if inhaled.

Precautionary Statements

Prevention: Do not breathe dust or mists. Use only outdoors or in a well-ventilated area. [In case of inadequate ventilation] wear respiratory protection. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Immediately call a POISON CENTER/doctor. Specific treatment is urgent (see this label). Wash contaminated clothing before reuse.

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

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Mixtures

| Chemical Identity | CAS number | Content in percent (%)* |
|----------------------------------|------------|-------------------------|
| Homopolymer of HDI | 28182-81-2 | 50 - <100% |
| Hexamethylene diisocyanate (HDI) | 822-06-0 | 0.1 - <1% |

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

4. First-aid measures

Ingestion: Call a POISON CENTER/doctor/.../if you feel unwell. Rinse mouth.



| | |
|----------------------|---|
| Inhalation: | Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. Move to fresh air. If breathing is difficult, give oxygen. |
| Skin Contact: | If skin irritation occurs: Get medical advice/attention. Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention. |
| Eye contact: | Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention. |

Most important symptoms/effects, acute and delayed

| | |
|------------------|--------------------|
| Symptoms: | No data available. |
| Hazards: | No data available. |

Indication of immediate medical attention and special treatment needed

| | |
|-------------------|--------------------|
| Treatment: | No data available. |
|-------------------|--------------------|

5. Fire-fighting measures

| | |
|------------------------------|---|
| General Fire Hazards: | No unusual fire or explosion hazards noted. |
|------------------------------|---|

Suitable (and unsuitable) extinguishing media

| | |
|--|--|
| Suitable extinguishing media: | Use fire-extinguishing media appropriate for surrounding materials. |
| 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

| | |
|--|---|
| Special fire fighting procedures: | No data available. |
| Special protective equipment for fire-fighters: | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |

6. Accidental release measures

| | |
|---|---|
| Personal precautions, protective equipment and emergency procedures: | Ventilate closed spaces before entering them. Evacuate area. See Section 8 of the SDS for Personal Protective Equipment. Keep upwind. Keep unauthorized personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. |
|---|---|

**Methods and material for containment and cleaning up:**

Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Notification Procedures:

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions:

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages.

7. Handling and storage**Precautions for safe handling:**

Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities:

Store away from incompatible materials. Store in original tightly closed container.

8. Exposure controls/personal protection**Control Parameters****Occupational Exposure Limits**

| Chemical Identity | type | Exposure Limit Values | Source |
|----------------------------------|------|-----------------------|---|
| Hexamethylene diisocyanate (HDI) | TWA | 0.005 ppm | US. ACGIH Threshold Limit Values (2011) |

| Chemical name | type | Exposure Limit Values | Source |
|----------------------------------|---------|-----------------------|---|
| Hexamethylene diisocyanate (HDI) | CEILING | 0.01 ppm | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| | TWA | 0.005 ppm | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| Hexamethylene diisocyanate (HDI) | TWA | 0.005 ppm | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015) |
| | CEV | 0.02 ppm | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015) |



| | | | |
|----------------------------------|-----|-----------------------|--|
| Hexamethylene diisocyanate (HDI) | TWA | 0.005 ppm 0.034 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |
|----------------------------------|-----|-----------------------|--|

Biological Limit Values

| Chemical Identity | Exposure Limit Values | Source |
|--|-------------------------------|---------------------|
| Hexamethylene diisocyanate (HDI) (Hexamethylenediamine (with hydrolysis): Sampling time: End of shift.) | 15 µg/g (Creatinine in urine) | ACGIH BEI (03 2015) |

Appropriate Engineering Controls

Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

General information: Use personal protective equipment as required.

Eye/face protection: Wear goggles/face shield.

Skin Protection

Hand Protection: Use suitable protective gloves if risk of skin contact.

Other: Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Respiratory Protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Hygiene measures:

Observe good industrial hygiene practices. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

9. Physical and chemical properties**Appearance**

Physical state: liquid

Form: liquid

Color: Colorless

Odor: Mild petroleum/solvent

Odor threshold: No data available.

pH: No data available.

Melting point/freezing point: No data available.

Initial boiling point and boiling range: No data available.

Flash Point: 196 °C 385 °F



| | |
|--|---|
| Evaporation rate: | Slower than Ether |
| Flammability (solid, gas): | No |
| Upper/lower limit on flammability or explosive limits | |
| Flammability limit - upper (%): | No data available. |
| Flammability limit - lower (%): | No data available. |
| Explosive limit - upper (%): | No data available. |
| Explosive limit - lower (%): | No data available. |
| Vapor pressure: | No data available. |
| Vapor density: | Vapors are heavier than air and may travel along the floor and in the bottom of containers. |
| Relative density: | 1.13 |
| Solubility(ies) | |
| Solubility in water: | Practically Insoluble |
| Solubility (other): | No data available. |
| Partition coefficient (n-octanol/water): | No data available. |
| Auto-ignition temperature: | No data available. |
| Decomposition temperature: | No data available. |
| Viscosity: | No data available. |

10. Stability and reactivity

| | |
|--|---|
| Reactivity: | No data available. |
| Chemical Stability: | Material is stable under normal conditions. |
| Possibility of hazardous reactions: | No data available. |
| Conditions to avoid: | Avoid heat or contamination. |
| Incompatible Materials: | Alcohols. Amines. Strong acids. Strong bases. Water, moisture. |
| Hazardous Decomposition Products: | Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. |

11. Toxicological information

Information on likely routes of exposure

| | |
|----------------------|---|
| Inhalation: | In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes. |
| Skin Contact: | Causes mild skin irritation. May cause an allergic skin reaction. |
| Eye contact: | Eye contact is possible and should be avoided. |
| Ingestion: | May be ingested by accident. Ingestion may cause irritation and malaise. |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|--------------------|--------------------|
| Inhalation: | No data available. |
|--------------------|--------------------|



Skin Contact: No data available.

Eye contact: No data available.

Ingestion: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: Not classified for acute toxicity based on available data.

Dermal

Product: Not classified for acute toxicity based on available data.

Inhalation

Product: ATEmix: 0.14 mg/l

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: No data available.

Serious Eye Damage/Eye Irritation

Product: No data available.

Respiratory or Skin Sensitization

Product: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause sensitization by inhalation.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

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

No carcinogenic components identified

**Germ Cell Mutagenicity**

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information**Ecotoxicity:****Acute hazards to the aquatic environment:**

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Persistence and Degradability

Biodegradation
Product: No data available.



BOD/COD Ratio

Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product: No data available.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in Soil:

No data available.

Other Adverse Effects:

No data available.

13. Disposal considerations

Disposal instructions:

Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging:

No data available.

14. Transport information

TDG:

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information

US Federal Regulations

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

None present or none present in regulated quantities.

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

None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

| <u>Chemical Identity</u> | <u>Reportable quantity</u> |
|----------------------------------|----------------------------|
| Hexamethylene diisocyanate (HDI) | 100 lbs. |

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Immediate (Acute) Health Hazards
Delayed (Chronic) Health Hazard

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

| <u>Chemical Identity</u> | <u>Reportable quantity</u> |
|----------------------------------|----------------------------|
| Hexamethylene diisocyanate (HDI) | 100 lbs. |

SARA 311/312 Hazardous Chemical

| <u>Chemical Identity</u> | <u>Threshold Planning Quantity</u> |
|----------------------------------|------------------------------------|
| Homopolymer of HDI | 10000 lbs |
| Hexamethylene diisocyanate (HDI) | 10000 lbs |

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

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

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

US State Regulations**US. California Proposition 65**

No ingredient regulated by CA Prop 65 present.

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

No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

International regulations



Montreal protocol

not applicable

Stockholm convention

not applicable

Rotterdam convention

not applicable

Kyoto protocol

not applicable

VOC: When appropriately mixed with the other part, product has a VOC less water and exempt solvent of:
340 g/l

Regulatory VOC (less water and exempt solvent) : 8 g/l

VOC Method 310 : 0.70 %

**Inventory Status:**

| | |
|--|--|
| Australia AICS: | All components in this product are listed on or exempt from the Inventory. |
| Canada DSL Inventory List: | All components in this product are listed on or exempt from the Inventory. |
| EINECS, ELINCS or NLP: | All components in this product are listed on or exempt from the Inventory. |
| Japan (ENCS) List: | One or more components in this product are not listed on or exempt from the Inventory. |
| China Inv. Existing Chemical Substances: | All components in this product are listed on or exempt from the Inventory. |
| Korea Existing Chemicals Inv. (KECI): | All components in this product are listed on or exempt from the Inventory. |
| Canada NDSL Inventory: | One or more components in this product are not listed on or exempt from the Inventory. |
| Philippines PICCS: | All components in this product are listed on or exempt from the Inventory. |
| US TSCA Inventory: | All components in this product are listed on or exempt from the Inventory. |
| New Zealand Inventory of Chemicals: | All components in this product are listed on or exempt from the Inventory. |
| Japan ISHL Listing: | One or more components in this product are not listed on or exempt from the Inventory. |
| Japan Pharmacopoeia Listing: | One or more components in this product are not listed on or exempt from the Inventory. |

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

| | |
|-----------------------------|--------------------|
| Revision Date: | 12/01/2016 |
| Version #: | 1.0 |
| Further Information: | No data available. |



EUCLID CHEMICAL

Version: 1.0
Revision Date: 12/01/2016

Disclaimer:

For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.



SAFETY DATA SHEET

1. Identification

Product identifier: TAMMS AG-400 TOPCOAT1:3 PART B
Product Code: TD2439404000

Recommended use and restriction on use

Recommended use: Coatings
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

EUCLID CHEMICAL COMPANY
19218 REDWOOD ROAD
CLEVELAND OH 44110
US

Contact person: EH&S Department
Telephone: 216-531-9222
Emergency telephone number: 1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 3

Health Hazards

Germ Cell Mutagenicity Category 1B
Carcinogenicity Category 1B
Aspiration Hazard Category 1

Unknown toxicity - Health

Acute toxicity, oral 46.6 %
Acute toxicity, dermal 46.61 %
Acute toxicity, inhalation, vapor 95.91 %
Acute toxicity, inhalation, dust or mist 100 %

Environmental Hazards

Acute hazards to the aquatic environment Category 3

Unknown toxicity - Environment

Acute hazards to the aquatic environment 90.31 %



Chronic hazards to the aquatic environment 100 %

Environmental Hazards

Acute hazards to the aquatic environment Category 3

Acute hazards to the aquatic environment 90.31 %

Chronic hazards to the aquatic environment 100 %

Label Elements**Hazard Symbol:**

Signal Word: Danger

Hazard Statement: Flammable liquid and vapor.
May cause genetic defects.
May cause cancer.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

Response: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. If exposed or concerned: Get medical advice/attention. In case of fire: Use ... to extinguish.

Storage: Store in well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Hazard(s) not otherwise classified (HNOC):**

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients**Mixtures**

| Chemical Identity | CAS number | Content in percent (%)* |
|--------------------------------|------------|-------------------------|
| Xylene | 1330-20-7 | 7 - 13% |
| Heavy aromatic naphtha | 64742-94-5 | 3 - 7% |
| Ethylbenzene | 100-41-4 | 1 - 5% |
| Butyl acetate | 123-86-4 | 0.1 - 1% |
| Aromatic petroleum distillates | 64742-95-6 | 0.1 - 1% |

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

4. First-aid measures**Ingestion:**

Rinse mouth. Call a physician or poison control center immediately. Never give liquid to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation:

Move to fresh air.

Skin Contact:

Wash skin thoroughly with soap and water. Take off immediately all contaminated clothing. If skin irritation occurs: Get medical advice/attention.

Eye contact:

Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: No data available.

5. Fire-fighting measures**General Fire Hazards:**

Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.



Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: Vapors may travel considerable distance to a source of ignition and flash back. Vapors may cause a flash fire or ignite explosively. Prevent buildup of vapors or gases to explosive concentrations.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep upwind.

Methods and material for containment and cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

7. Handling and storage

Precautions for safe handling: Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Take precautionary measures against static discharges. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities: Store locked up. Store in a well-ventilated place. Store in a cool place.



8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

| Chemical Identity | type | Exposure Limit Values | Source |
|--|---------|-----------------------|--|
| Xylene | STEL | 150 ppm 655 mg/m3 | US. NIOSH: Pocket Guide to Chemical Hazards (2010) |
| | REL | 100 ppm 435 mg/m3 | US. NIOSH: Pocket Guide to Chemical Hazards (2010) |
| | STEL | 150 ppm 655 mg/m3 | US. NIOSH: Pocket Guide to Chemical Hazards (2010) |
| | REL | 100 ppm 435 mg/m3 | US. NIOSH: Pocket Guide to Chemical Hazards (2010) |
| | STEL | 150 ppm 655 mg/m3 | US. NIOSH: Pocket Guide to Chemical Hazards (2010) |
| | REL | 100 ppm 435 mg/m3 | US. NIOSH: Pocket Guide to Chemical Hazards (2010) |
| | STEL | 150 ppm 655 mg/m3 | US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989) |
| | TWA | 100 ppm 435 mg/m3 | US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989) |
| | TWA | 100 ppm 435 mg/m3 | US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008) |
| | STEL | 150 ppm 655 mg/m3 | US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008) |
| | ST ESL | 350 µg/m3 | US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011) |
| | ST ESL | 80 ppb | US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011) |
| | AN ESL | 42 ppb | US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011) |
| | AN ESL | 180 µg/m3 | US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011) |
| | STEL | 150 ppm 655 mg/m3 | US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010) |
| | Ceiling | 300 ppm | US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010) |
| | TWA PEL | 100 ppm 435 mg/m3 | US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010) |
| | TWA | 100 ppm | US. ACGIH Threshold Limit Values (2011) |
| | STEL | 150 ppm | US. ACGIH Threshold Limit Values (2011) |
| | PEL | 100 ppm 435 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor | TWA | 200 mg/m3 | US. ACGIH Threshold Limit Values (03 2014) |
| Heavy aromatic naphtha | PEL | 100 ppm 400 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| Ethylbenzene | TWA | 20 ppm | US. ACGIH Threshold Limit Values (2011) |
| | PEL | 100 ppm 435 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| Butyl acetate | PEL | 150 ppm 710 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| | TWA | 50 ppm | US. ACGIH Threshold Limit Values (03 2016) |
| | STEL | 150 ppm | US. ACGIH Threshold Limit Values (03 2016) |



| Chemical name | type | Exposure Limit Values | Source |
|--|------|-----------------------|---|
| 1-Methoxy-2-propanol acetate | TWA | 50 ppm | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| | STEL | 75 ppm | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| 1-Methoxy-2-propanol acetate | TWA | 50 ppm 270 mg/m3 | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| Xylene | TWA | 100 ppm 434 mg/m3 | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009) |
| | STEL | 150 ppm 651 mg/m3 | Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009) |
| Xylene | TWA | 100 ppm | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| | STEL | 150 ppm | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007) |
| Xylene | TWA | 100 ppm | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| | STEL | 150 ppm | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| Xylene | TWA | 100 ppm 434 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |
| | STEL | 150 ppm 651 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |
| Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor | TWA | 200 mg/m3 | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013) |
| Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor | TWA | 200 mg/m3 | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| Heavy aromatic naphtha | TWA | 525 mg/m3 | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010) |
| Heavy aromatic naphtha | TWA | 400 ppm 1,590 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (11 2011) |
| Ethylbenzene | TWA | 20 ppm | Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (09 2011) |
| Ethylbenzene | TWA | 20 ppm | Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015) |
| Ethylbenzene | TWA | 100 ppm 434 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |
| | STEL | 125 ppm 543 mg/m3 | Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008) |

**Biological Limit Values**

| Chemical Identity | Exposure Limit Values | Source |
|---|--------------------------------|---------------------|
| Xylene (Methylhippuric acids: Sampling time: End of shift.) | 1.5 g/g (Creatinine in urine) | ACGIH BEI (03 2013) |
| Ethylbenzene (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift.) | 0.15 g/g (Creatinine in urine) | ACGIH BEI (02 2014) |

Appropriate Engineering Controls

Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment**General information:**

Use explosion-proof ventilation equipment. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection:

Wear safety glasses with side shields (or goggles).

Skin Protection**Hand Protection:**

Use suitable protective gloves if risk of skin contact.

Other:

Wear suitable protective clothing.

Respiratory Protection:

In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.

Hygiene measures:

Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. When using do not smoke.

9. Physical and chemical properties**Appearance****Physical state:**

liquid

Form:

liquid

Color:

Pale yellow

Odor:

Mild petroleum/solvent

Odor threshold:

No data available.

pH:

No data available.

Melting point/freezing point:

No data available.

Initial boiling point and boiling range:

No data available.

Flash Point:

26 °C 79 °F

Evaporation rate:

Slower than Ether

Flammability (solid, gas):

No

Upper/lower limit on flammability or explosive limits



| | |
|---|---|
| Flammability limit - upper (%): | No data available. |
| Flammability limit - lower (%): | No data available. |
| Explosive limit - upper (%): | No data available. |
| Explosive limit - lower (%): | No data available. |
| Vapor pressure: | No data available. |
| Vapor density: | Vapors are heavier than air and may travel along the floor and in the bottom of containers. |
| Relative density: | 1.036 |
| Solubility(ies) | |
| Solubility in water: | Practically Insoluble |
| Solubility (other): | No data available. |
| Partition coefficient (n-octanol/water): | No data available. |
| Auto-ignition temperature: | No data available. |
| Decomposition temperature: | No data available. |
| Viscosity: | < 20.5 mm ² /s (40 °C 104 °F) |

10. Stability and reactivity

| | |
|--|--|
| Reactivity: | No data available. |
| Chemical Stability: | Material is stable under normal conditions. |
| Possibility of hazardous reactions: | No data available. |
| Conditions to avoid: | Heat, sparks, flames. |
| Incompatible Materials: | Strong acids. Avoid contact with oxidizing agents (e.g. nitric acid, peroxides and chromates). Strong bases. |
| Hazardous Decomposition Products: | Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. |

11. Toxicological information

Information on likely routes of exposure

| | |
|----------------------|---|
| Inhalation: | In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes. |
| Skin Contact: | May be harmful in contact with skin. Causes mild skin irritation. |
| Eye contact: | Eye contact is possible and should be avoided. |
| Ingestion: | May be ingested by accident. Ingestion may cause irritation and malaise. |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|----------------------|--------------------|
| Inhalation: | No data available. |
| Skin Contact: | No data available. |



Eye contact: No data available.

Ingestion: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix: 24,018.65 mg/kg

Dermal

Product: ATEmix: 2,560.38 mg/kg

Inhalation

Product: Not classified for acute toxicity based on available data.

Specified substance(s):

Heavy aromatic naphtha LC 50 (Rat): 25.7 mg/l

Butyl acetate LC 50 (Rat): 1.802 mg/l

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: No data available.

Specified substance(s):

Xylene in vivo (Rabbit): Moderate irritant Experimental result, Weight of Evidence study

Heavy aromatic naphtha in vivo (Rabbit): Irritating Experimental result, Key study

Butyl acetate in vivo (Rabbit): Not irritant Experimental result, Key study

Aromatic petroleum distillates in vivo (Rabbit): Irritating Experimental result, Key study

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

Xylene Rabbit, 24 hrs: Moderately irritating



| | |
|--------------------------------|-------------------------------------|
| Heavy aromatic naphtha | Rabbit, 24 - 72 hrs: Not irritating |
| Ethylbenzene | Rabbit, 7 d: Slightly irritating |
| Butyl acetate | Rabbit, 24 - 72 hrs: Not irritating |
| Aromatic petroleum distillates | Rabbit, 24 - 72 hrs: Not irritating |

Respiratory or Skin Sensitization

Product: No data available.

Carcinogenicity

Product: May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Ethylbenzene Overall evaluation: Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

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

No carcinogenic components identified

Germ Cell Mutagenicity**In vitro**

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: May be fatal if swallowed and enters airways.



Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Xylene LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 13.41 mg/l Mortality

Ethylbenzene LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 7.5 - 11 mg/l Mortality

Butyl acetate LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 17 - 19 mg/l Mortality

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Ethylbenzene EC 50 (Water flea (*Daphnia magna*), 48 h): 1.37 - 4.4 mg/l Intoxication

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Heavy aromatic naphtha NOAEL (*Oncorhynchus mykiss*, 28 d): 0.098 mg/l QSAR QSAR, Key study

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

BOD/COD Ratio

Product: No data available.

**Bioaccumulative Potential****Bioconcentration Factor (BCF)****Product:** No data available.**Partition Coefficient n-octanol / water (log Kow)****Product:** No data available.**Specified substance(s):**

| | |
|---------------|----------------------|
| Xylene | Log Kow: 3.12 - 3.20 |
| Ethylbenzene | Log Kow: 3.15 |
| Butyl acetate | Log Kow: 1.78 |

Mobility in Soil: No data available.**Other Adverse Effects:** Harmful to aquatic organisms.**13. Disposal considerations****Disposal instructions:** Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.**Contaminated Packaging:** No data available.**14. Transport information****TDG:**

UN1993, FLAMMABLE LIQUID, N.O.S. (Xylene), 3, PG III

CFR / DOT:

UN1993, Flammable liquids, n.o.s. (Xylene), 3, PG III

IMDG:

UN1993, FLAMMABLE LIQUID, N.O.S. (Xylene), 3, PG III

Further Information:

The above shipping description may not be accurate for all container sizes and all modes of transportation. Please refer to Bill of Lading.

15. Regulatory information**US Federal Regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

None present or none present in regulated quantities.



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

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

| <u>Chemical Identity</u> | <u>Reportable quantity</u> |
|--------------------------|----------------------------|
| Xylene | 100 lbs. |
| Ethylbenzene | 1000 lbs. |
| Butyl acetate | 5000 lbs. |
| Toluene | 1000 lbs. |

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

- Fire Hazard
- Delayed (Chronic) Health Hazard
- Immediate (Acute) Health Hazards

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

| <u>Chemical Identity</u> | <u>Reportable quantity</u> |
|--------------------------|----------------------------|
| Xylene | 100 lbs. |
| Ethylbenzene | 1000 lbs. |
| Butyl acetate | 5000 lbs. |
| Toluene | 1000 lbs. |

SARA 311/312 Hazardous Chemical

| <u>Chemical Identity</u> | <u>Threshold Planning Quantity</u> |
|--------------------------------|------------------------------------|
| Xylene | 10000 lbs |
| Heavy aromatic naphtha | 10000 lbs |
| Ethylbenzene | 10000 lbs |
| Butyl acetate | 10000 lbs |
| Aromatic petroleum distillates | 10000 lbs |

SARA 313 (TRI Reporting)

| <u>Chemical Identity</u> |
|--------------------------|
| Xylene |
| Ethylbenzene |

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

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

| | |
|--------------|-----------------------|
| Ethylbenzene | Carcinogenic. 09 2011 |
|--------------|-----------------------|

**Inventory Status:**

| | |
|--|--|
| Australia AICS: | One or more components in this product are not listed on or exempt from the Inventory. |
| Canada DSL Inventory List: | One or more components in this product are not listed on or exempt from the Inventory. |
| EINECS, ELINCS or NLP: | One or more components in this product are not listed on or exempt from the Inventory. |
| Japan (ENCS) List: | One or more components in this product are not listed on or exempt from the Inventory. |
| China Inv. Existing Chemical Substances: | One or more components in this product are not listed on or exempt from the Inventory. |
| Korea Existing Chemicals Inv. (KECI): | One or more components in this product are not listed on or exempt from the Inventory. |
| Canada NDSL Inventory: | One or more components in this product are not listed on or exempt from the Inventory. |
| Philippines PICCS: | One or more components in this product are not listed on or exempt from the Inventory. |
| US TSCA Inventory: | All components in this product are listed on or exempt from the Inventory. |
| New Zealand Inventory of Chemicals: | One or more components in this product are not listed on or exempt from the Inventory. |
| Japan ISHL Listing: | One or more components in this product are not listed on or exempt from the Inventory. |
| Japan Pharmacopoeia Listing: | One or more components in this product are not listed on or exempt from the Inventory. |

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

| | |
|-----------------------------|--------------------|
| Revision Date: | 12/01/2016 |
| Version #: | 1.0 |
| Further Information: | No data available. |



EUCLID CHEMICAL

Version: 1.0
Revision Date: 12/01/2016

Disclaimer:

For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.