

SAFETY DATA SHEET



CRAYVALLAC® PA4 X 20

1. PRODUCT AND COMPANY IDENTIFICATION

Company

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Arkema Coating Resins

Customer Service Telephone Number: (877) 331-6696
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: CRAYVALLAC® PA4 X 20
Synonyms: Not available
Molecular formula: Complex mixture
Chemical family: Amide wax
Product use: Additive for :Paints, Coatings, Inks, Adhesives

SECTION 2: HAZARDS IDENTIFICATION

Emergency Overview

Color: off-white
Physical state: solid
Form: paste
Odor: sweet, oily

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***Classification of the substance or mixture:**

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

- Flammable solids, Category 1, H228
- Inhalation: Acute toxicity, Category 4, H332
- Dermal: Acute toxicity, Category 4, H312
- Skin irritation, Category 2, H315
- Eye irritation, Category 2A, H319
- Skin sensitisation, Category 1, H317
- Reproductive toxicity, Category 2, H361
- Specific target organ toxicity - single exposure, Category 3, H335 + H336
- Specific target organ toxicity - repeated exposure, Category 2, H373
- Chronic aquatic toxicity, Category 3, H412

*For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms:



Signal word:

Danger

Hazard statements:

- H228 : Flammable solid.
- H312 + H332 : Harmful in contact with skin or if inhaled.
- H315 : Causes skin irritation.
- H317 : May cause an allergic skin reaction.
- H319 : Causes serious eye irritation.
- H335 + H336 : May cause respiratory irritation, and drowsiness or dizziness.
- H361 : Suspected of damaging fertility or the unborn child.
- H373 : May cause damage to organs through prolonged or repeated exposure.
- H412 : Harmful to aquatic life with long lasting effects.

Supplemental Hazard Statements:

Specific target organ toxicity - repeated exposure:
auditory system, lungs, nervous system, sensory organs.

Precautionary statements:**Prevention:**

P201 : Obtain special instructions before use.
P202 : Do not handle until all safety precautions have been read and understood.
P210 : Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P240 : Ground/bond container and receiving equipment.
P241 : Use explosion-proof electrical/ ventilating/ lighting equipment.
P260 : Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 : Wash skin thoroughly after handling.
P271 : Use only outdoors or in a well-ventilated area.
P272 : Contaminated work clothing should not be allowed out of the workplace.
P273 : Avoid release to the environment.
P280 : Wear protective gloves or eye protection or face protection.
P281 : Use personal protective equipment as required.

Response:

P302 + P352 : IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 : IF exposed or concerned: Get medical advice/ attention.
P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 : If eye irritation persists: Get medical advice/ attention.
P362 : Take off contaminated clothing and wash before reuse.
P370 + P378 : In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

P403 + P233 : Store in a well-ventilated place. Keep container tightly closed.
P405 : Store locked up.

Disposal:

P501 : Dispose of contents or container to an approved waste disposal plant.

Supplemental information:**Potential Health Effects:**

Due to the presence of the solvent : Prolonged or repeated exposure can cause hearing loss. Prolonged or repeated skin contact may cause defatting resulting in drying, redness and rash. Contains high molecular weight polymer(s).

Medical conditions aggravated by overexposure:

Hearing disorders

Neurological disorders

Respiratory disease or diminished respiratory capacity.

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Other:

Dried product may stick to the skin causing irritation upon removal.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS
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Chemical name	CAS-No.	Wt/Wt	GHS Classification**
Xylene	1330-20-7	>= 60 - <= 80 %	H226, H312, H332, H315, H335 + H336, H373, H304, H412
Ethanol	64-17-5	>= 10 - < 30 %	H225, H319
Benzene, ethyl-	100-41-4	>= 10 - < 30 %	H225, H332, H315, H335 + H336, H373, H304, H412
Amide wax	Proprietary*	> 10 - < 30 %	H317, H373, H413
Benzene, methyl-	108-88-3	>= 1 - < 5 %	H225, H315, H361, H336, H373, H304, H412

*The specific chemical identity is withheld because it is trade secret information of Arkema Inc.

**For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of necessary first-aid measures:

Inhalation:

If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin:

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In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Ingestion:

If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed:

For most important symptoms and effects (acute and delayed), see Section 2 (Hazard Statements and Supplemental Information if applicable) and Section 11 (Toxicology Information) of this SDS.

4.3. Indication of any immediate medical attention and special treatment needed:

Unless otherwise noted in Notes to Physician, no specific treatment noted; treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media (suitable):

Water spray, Carbon dioxide (CO₂), Foam, Dry chemical

Extinguishing media (unsuitable):

Water may be ineffective., Do not use a solid water stream as it may scatter and spread fire.

Protective equipment:

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:

Do not allow run-off from fire fighting to enter drains or water courses.

Cool closed containers exposed to fire with water spray.

Closed containers of this material may explode when subjected to heat from surrounding fire.

After a fire, wait until the material has cooled to room temperature before initiating clean-up activities.

Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:

Vapors are heavier than air and may travel along the ground or be moved by ventilation and ignited by heat, pilot lights, and other flames and ignition sources at locations distant from material handling point.

When burned, the following hazardous products of combustion can occur:

Carbon oxides

Nitrogen oxides

Hazardous organic compounds

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, Emergency procedures, Methods and materials for containment/clean-up:**

Prevent further leakage or spillage if you can do so without risk. Evacuate area of all unnecessary personnel. Ventilate the area. Eliminate all ignition sources. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as sodium bicarbonate, sodium carbonate, calcium carbonate, clean sand or non-acidic clay and then wet down (dampen) the mixture with water. Sweep or scoop up using non-sparking tools and place into suitable properly labeled containers for prompt disposal. The sweepings should be wetted down further with water. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Protective equipment:

Appropriate personal protective equipment is set forth in Section 8.

SECTION 7: HANDLING AND STORAGE**Handling****General information on handling:**

Do not taste or swallow.
Avoid contact with skin, eyes and clothing.
Avoid breathing dust.
Keep away from heat, sparks and flames.
No smoking.
Keep container tightly closed.
Use only with adequate ventilation.
Check that all equipment is properly grounded and installed to satisfy electrical classification requirements.
Follow label warnings even after container is emptied.
Emptied container retains product residue.
Container hazardous when empty.
Wash thoroughly after handling.
Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.
RESIDUAL VAPORS MAY EXPLODE ON IGNITION.
DO NOT CUT, DRILL, GRIND, OR WELD ON OR NEAR THIS CONTAINER.
Improper disposal or reuse of this container may be dangerous and/or illegal.

Storage**General information on storage conditions:**

Keep in a dry, cool place. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. Keep away from direct sunlight. Keep container closed when not in use. Store in well ventilated area away from heat and sources of ignition such as flame, sparks and static electricity. Ensure that all storage and handling equipment is properly grounded and installed to satisfy electrical classification requirements. Static electricity may accumulate when transferring material. All metal and groundable storage containers, including but not limited to drums, cylinders, Returnable Intermodal Bulk Containers (RIBCs) and Class C Flexible Intermodal Bulk Containers (FIBCs) must be bonded and grounded during filling and emptying operations. Observe all federal, state and local

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regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497.

Storage incompatibility – General:

Store separate from:

- Acids
- Oxidizing agents

Temperature tolerance – Do not store above:

68 °F (20 °C)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

Xylene (1330-20-7)

US. ACGIH Threshold Limit Values

Time weighted average	100 ppm
Short Term Exposure Limit (STEL):	150 ppm

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

PEL:	100 ppm (435 mg/m3)
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Ethanol (64-17-5)

US. ACGIH Threshold Limit Values, as amended

Short Term Exposure Limit (STEL):	1,000 ppm
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US. ACGIH Threshold Limit Values

Short Term Exposure Limit (STEL):	1,000 ppm
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US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PEL:	1,000 ppm (1,900 mg/m3)
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Benzene, ethyl- (100-41-4)

US. ACGIH Threshold Limit Values

Time weighted average	20 ppm
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US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

PEL:	100 ppm (435 mg/m3)
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Benzene, methyl- (108-88-3)

US. ACGIH Threshold Limit Values

Time weighted average	20 ppm
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US. OSHA Table Z-2 (29 CFR 1910.1000)

Time weighted average	200 ppm
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US. OSHA Table Z-2 (29 CFR 1910.1000)

Ceiling Limit Value	300 ppm
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US. OSHA Table Z-2 (29 CFR 1910.1000)

Maximum concentration:	500 ppm
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Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

Engineering controls:

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Respiratory protection:

Avoid breathing dust. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply

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with 29 CFR § 1910.134.

Skin protection:

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Rinse immediately if skin is contaminated. Wash contaminated clothing and clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

Eye protection:

Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color:	off-white
Physical state:	solid
Form:	paste
Odor:	sweet, oily
Odor threshold:	No data available
Flash point	= 68 °F (20 °C) (Setaflash closed cup)
Auto-ignition temperature:	No data available.
Lower flammable limit (LFL):	No data available
Upper flammable limit (UFL):	No data available
pH:	No data available
Density:	0.86 g/cm3 (68 °F (20 °C))
Specific Gravity (Relative density):	0.86 (68 °F (20 °C))Water=1 (liquid)
Boiling point/boiling range:	No data available
Melting point/range:	No data available
Freezing point:	No data available
Evaporation rate:	No data available

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Solubility in water:	insoluble
Burning rate:	20 mm/s (Method: The Manual of Tests and Criteria - Part 33.2.1) Wetted zone does not stop fire.
Viscosity, dynamic:	No data available
Oil/water partition coefficient:	(No data available)
Thermal decomposition:	No data available
Flammability:	See GHS Classification in Section 2 if applicable

SECTION 10: STABILITY AND REACTIVITY**Stability:**

The product is stable under normal handling and storage conditions.

Hazardous reactions:

Hazardous polymerisation does not occur.

Materials to avoid:

Acids
Oxidizing agents

Conditions / hazards to avoid:

Keep away from heat and sources of ignition.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products :
Carbon oxides
Nitrogen oxides
Hazardous organic compounds

SECTION 11: TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Data for CRAYVALLAC® PA4 X 20**Acute toxicity****Oral:**

May be harmful if swallowed. Acute toxicity estimate 4,592 mg/kg.

Dermal:

Harmful in contact with skin. Acute toxicity estimate 1,833 mg/kg.

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Inhalation:

Harmful if inhaled. 4 h Acute toxicity estimate 15.72 mg/l. (vapor)

Data for Xylene (1330-20-7)

Acute toxicity

Oral:

May be harmful if swallowed. (rat) LD50 = 3,523 mg/kg.

Dermal:

Harmful in contact with skin. Acute toxicity estimate = 1,100 mg/kg.

Inhalation:

Harmful if inhaled. 4 h Acute toxicity estimate = 11 mg/l. (vapor)

Specific target organ toxicity - single exposure:

May cause respiratory irritation.

May cause drowsiness or dizziness.

Skin Irritation:

Causes skin irritation. (rabbit) (4 h)

Eye Irritation:

Causes mild eye irritation. (rabbit) (data for a similar material)

Skin Sensitization:

Not a sensitizer. LLNA: Local Lymph Node Assay. (mouse) Equivocal response.

Repeated dose toxicity

Subchronic inhalation administration to rat / affected organ(s): liver, auditory system / signs: reduced body weight, increased organ weight, hearing impairment

Subchronic inhalation administration to Dog / signs: no adverse effects

Subchronic oral administration to rat / affected organ(s): kidney, liver / signs: reduced body weight, increased organ weight

Subchronic oral administration to mouse / signs: reduced body weight, nervous system effects

Specific target organ toxicity - repeated exposure:

May cause damage to organs through prolonged or repeated exposure. (Auditory system)

Carcinogenicity

Chronic oral administration to rat, mouse / No increase in tumor incidence was reported.

Classified by the International Agency for Research on Cancer as: Group 3: Unclassifiable as to carcinogenicity in humans.

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Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells, yeast

Genotoxicity**Assessment in Vivo:**

No genetic changes were observed in laboratory tests using: rat, mice

Developmental toxicity

Exposure during pregnancy. Oral (mouse) / Birth defects were observed. (at doses that produce effects in mothers)

Exposure during pregnancy. Inhalation (rat, rabbit, mouse) / Birth defects were observed. (at doses that produce effects in mothers)

Reproductive effects

Reproduction test. Inhalation (rat) / No toxicity to reproduction.

Other information

Aspiration hazard

Human experience**General:**

Overexposure may cause CNS depression including headache, dizziness, nausea and loss of consciousness.

Irritating to eyes, respiratory system and skin.

Human experience**Inhalation:**

Nervous system: hearing loss. (repeated or prolonged exposure) (based on reports of occupational exposure to workers)

Liver, kidney: changes in organ structure or function. Exposures exceeded recommended occupational exposure limit. (severity of effects depends on extent of exposure) (based on reports of occupational exposure to workers)

Human experience**Skin contact:**

No skin allergy was observed. (studied using human volunteers)

Skin: severe irritation. (repeated or prolonged exposure)

Data for Amide wax (Proprietary)**Acute toxicity****Oral:**

No deaths occurred. (rat) LD0 > 2,000 mg/kg.

Dermal:

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No deaths occurred. (rat) LD0 = 2,000 mg/kg.

Inhalation:

No deaths occurred. (rat) 4 h LC0 > 4.1 mg/l. (dust/mist)

Skin Irritation:

Practically non-irritating. (rabbit) (4 h)

Eye Irritation:

Causes mild eye irritation. (rabbit)

Skin Sensitization:

May cause an allergic skin reaction. Guinea pig maximization test. Skin allergy was observed.

Repeated dose toxicity

Repeated oral administration to rat / No adverse systemic effects reported.

Subchronic inhalation (dust/mist/fume) administration to rat / affected organ(s): Lungs / signs: changes in organ structure or function / No adverse systemic effects reported.

Specific target organ toxicity - repeated exposure:

May cause damage to organs through prolonged or repeated exposure if inhaled. (Lungs)

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells, human cells

Developmental toxicity

Exposure during pregnancy. Oral (rat) / No birth defects were observed.

Reproductive effects

Reproductive/Developmental Effects Screening Assay. Oral (rat) / No toxicity to reproduction. / (data for a similar material)

Data for Ethanol (64-17-5)**Acute toxicity****Oral:**

Practically nontoxic. (rat) LD50 = 10,470 mg/kg.

Dermal:

Practically nontoxic. (rabbit) LD50 > 20,000 mg/kg.

Inhalation:

Practically nontoxic. (rat) 4 h LC50 = 124.7 mg/l. (vapor)

Skin Irritation:

Not irritating. (rabbit) (24 h) (occluded exposure)

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Eye Irritation:

Causes serious eye irritation. (rabbit)

Skin Sensitization:

Not a sensitizer. LLNA: Local Lymph Node Assay. (mouse) No skin allergy was observed

Not a sensitizer. Mouse ear swelling assay. No skin allergy was observed

Repeated dose toxicity

Subchronic oral administration to rat / affected organ(s): kidney / signs: changes in organ weights, changes in organ structure or function

Subchronic drinking water administration to rat / affected organ(s): liver / signs: changes in organ structure or function

Subchronic drinking water administration to mouse / affected organ(s): liver, heart, kidney, lung / signs: changes in organ weights

Repeated inhalation administration to rat / No adverse systemic effects reported.

Carcinogenicity

Chronic oral administration to rat, mouse / No increase in tumor incidence was reported.

Repeated administration to laboratory animal / Promotes tumor formation when administered with a cancer causing agent.

Chronic oral administration to human subjects / affected organ(s): Gastro-intestinal tract, liver / Increased incidence of tumors was reported. (Effects reported after excessive oral intake are not associated with occupational exposure.)

Classified by the International Agency for Research on Cancer as: Group 1: Carcinogenic to humans.

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells

Genotoxicity**Assessment in Vivo:**

Both positive and negative responses for genetic changes were observed in laboratory tests using: rats, mice, hamster

Developmental toxicity

Exposure during pregnancy. Inhalation (rat) / No birth defects were observed.

Exposure during pregnancy. Oral (mouse) / Birth defects and toxicity were observed. (delays in development)

Exposure during pregnancy. drinking water (rat, rabbit, mouse) / No birth defects were observed. (delays in development, at doses that produce effects in mothers)

Reproductive effects

Two-generation study. drinking water (mouse) / No toxicity to reproduction. At high dose : Effects on fertility (testicular changes)

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Reproduction test. Inhalation (rat) / No toxicity to reproduction.

Human experience**General:**

Overexposure may cause CNS depression including headache, dizziness, nausea and loss of consciousness. Prolonged skin contact may defat the skin and produce dermatitis. Although human and animal studies have shown adverse effects such as liver toxicity, heart damage, pancreatitis, effects on the developing offspring, increased cancer or the upper digestive tract, nervous system toxicity and diminished immune capacity associated with abuse of alcoholic beverages, these effects have not been associated with workplace exposures.

Human experience**Inhalation:**

Upper respiratory tract: Local irritation. (mist) (vapor)

Human experience**Skin contact:**

Skin allergy was observed. Sensitization described in isolated cases.

Human experience**Eye contact:**

Eyes: irritation. (liquid) (vapor)

Human experience**Ingestion:**

Systemic effects: central nervous system depression, liver effects, reductions in birth weight. (effects associated with substance abuse)

Data for Benzene, ethyl- (100-41-4)**Acute toxicity****Oral:**

May be harmful if swallowed. (rat) LD50 = 3,500 mg/kg.

Dermal:

Practically nontoxic. (rabbit) LD50 = 15,400 mg/kg.

Inhalation:

Harmful if inhaled. (rat) 4 h LC50 17.4 mg/l. (vapor)

Specific target organ toxicity - single exposure:

May cause drowsiness or dizziness.

May cause respiratory irritation.

Skin Irritation:

Causes skin irritation. (rabbit)

Eye Irritation:

Causes mild eye irritation. (rabbit)

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Repeated dose toxicity

Chronic inhalation administration to mouse / affected organ(s): liver, lung, Thyroid gland, Pituitary gland / signs: increased organ weight, changes in organ structure or function

Chronic inhalation administration to rat / affected organ(s): kidney, testes / signs: changes in organ structure or function

Subchronic inhalation administration to rat / affected organ(s): kidney, liver / signs: increased organ weight, changes in organ structure or function

Repeated inhalation administration to rat / affected organ(s): Central nervous system, ears / signs: central nervous system depression, hearing impairment / (Repeated exposure at high concentrations)

Repeated oral administration to rat / affected organ(s): liver, kidney / signs: increased organ weight, changes in organ structure or function, hyaline droplet nephropathy

Specific target organ toxicity - repeated exposure:

May cause damage to organs through prolonged or repeated exposure. (Auditory system)

Carcinogenicity

Chronic inhalation administration to male rat / affected organ(s): kidney, testes / Increase in tumor incidence was reported.

Chronic inhalation administration to mouse / affected organ(s): lung, liver / Increase in tumor incidence was reported.

Classified by the International Agency for Research on Cancer as: Group 2B: Possibly carcinogenic to humans.

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: yeast, bacteria

Both positive and negative responses for genetic changes were observed in laboratory tests using: animal cells

Genotoxicity**Assessment in Vivo:**

Generally, no genetic changes were observed in laboratory studies using: mice, fruit flies

Developmental toxicity

Exposure during pregnancy. Inhalation (rat and rabbit) / No birth defects were observed. (at doses that produce effects in mothers)

Reproductive effects

Two generation reproduction study. Inhalation (rat) / No toxicity to reproduction

Human experience**Inhalation:**

Upper respiratory tract: Local irritation, sore throat. (severity of effects depends on extent of exposure)

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Systemic effects: dizziness. (severity of effects depends on extent of exposure)

Systemic effects: hearing loss. (data for similar materials)

Human experience**Skin contact:**

No skin allergy was observed. (studied using human volunteers)

Human experience**Eye contact:**

Eyes: Local irritation, tearing, stinging. (vapor)

Data for Benzene, methyl- (108-88-3)**Acute toxicity****Oral:**

Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

Dermal:

Practically nontoxic. (rabbit) LD50 = 12,400 mg/kg.

Inhalation:

May be harmful if inhaled. (rat) 4 h LC50 = 28.1 mg/l. (vapor)

Specific target organ toxicity - single exposure:

May cause drowsiness or dizziness.

Skin Irritation:

Causes skin irritation. (rabbit) (4 h)

Eye Irritation:

Causes mild eye irritation. (rabbit)

Skin Sensitization:

Not a sensitizer. Guinea pig maximization test. No skin allergy was observed.

Repeated dose toxicity

Subchronic oral administration to rat / affected organ(s): brain, urinary bladder / signs: changes in organ structure or function / (at high doses)

Repeated inhalation administration to rat / affected organ(s): nasal cavity, central nervous system / signs: respiratory irritation, tissue damage, nervous system injury, central nervous system depression, hearing impairment

Specific target organ toxicity - repeated exposure:

May cause damage to organs through prolonged or repeated exposure. (Nervous system, Auditory system, Sensory organs)

Carcinogenicity

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Chronic inhalation administration to rat and mouse / No increase in tumor incidence was reported.

Repeated dermal administration to mouse / No increase in tumor incidence was reported.

Classified by the International Agency for Research on Cancer as: Group 3: Unclassifiable as to carcinogenicity in humans.

Genotoxicity**Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria

Both positive and negative responses for genetic changes were observed in laboratory tests using: human cells, animal cells

Genotoxicity**Assessment in Vivo:**

No genetic changes were observed in laboratory tests using: animals, rats, mice, human subjects

Developmental toxicity

Exposure during pregnancy. Oral (rat) / No birth defects were observed. (levels produced toxic effects in the mothers and offspring)

Exposure during pregnancy. Inhalation (rat) / No birth defects were observed. (toxic effects noted in offspring, delays in development, changes in behavior)

Exposure during pregnancy. Inhalation (rat and mouse) / No birth defects were observed. (levels produced toxic effects in the mothers and offspring)

Reproductive effects

Multiple generation reproduction test. Inhalation (rat, mouse) / No toxicity to reproduction.

Other information

Aspiration hazard

Human experience**General:**

Overexposure may cause CNS depression including headache, dizziness, nausea and loss of consciousness. Prolonged exposure may cause chronic effects. Repeated and prolonged exposure to solvents may cause brain and nervous system damage.

Human experience**Inhalation:**

Nervous system: Neurological disorders, fatigue, tremors, dizziness, headache, speech impairment, hearing loss, visual disturbances. (extent of injury depends on severity of exposure)

Exposure during pregnancy: May cause harm to the unborn child, developmental effects, delays in development. (glue sniffing)

Human experience**Skin contact:**

Skin: Dermatitis, irritation, redness, cracking.

SECTION 12: ECOLOGICAL INFORMATION**Chemical Fate and Pathway**

Data on this material and/or its components are summarized below.

Data for CRAYVALLAC® PA4 X 20**Octanol Water Partition Coefficient:**

(No data available)

Data for Xylene (1330-20-7)**Biodegradation:**

Readily biodegradable. biodegradation > 69 %

Octanol Water Partition Coefficient:

log Pow: = 3.2

Data for Amide wax (Proprietary)**Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 6 %

Octanol Water Partition Coefficient:

log Pow: > 13.28

Data for Ethanol (64-17-5)**Biodegradation:**

Readily biodegradable. (20 d) biodegradation 84 %

Octanol Water Partition Coefficient:

log Pow: = -0.35

Data for Benzene, ethyl- (100-41-4)**Biodegradation:**

Readily biodegradable. (28 d) biodegradation 79 %

Octanol Water Partition Coefficient:

log Pow: = 3.6

Data for Benzene, methyl- (108-88-3)**Biodegradation:**

Readily biodegradable. (20 d) biodegradation 63 - 86 %

Bioaccumulation:

Not expected to bioaccumulate.

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3 d BCF = 90 (Leuciscus idus (Golden orfe))

Octanol Water Partition Coefficient:

log Pow: = 2.73, at 68 °F (20 °C) 7

Mobility and Distribution in the Environment:

Log Koc = 1.5 - 2.2

Ecotoxicology

Data on this material and/or its components are summarized below.

Data for Xylene (1330-20-7)**Aquatic toxicity data:**

Toxic. Oncorhynchus mykiss (rainbow trout) 96 h LC50 = 2.6 mg/l

Aquatic invertebrates:

Toxic. Daphnia magna (Water flea) 24 h IC50 = 1 mg/l

Algae:

Toxic. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 = 4.36 mg/l (data for a similar material)

Chronic toxicity to fish:

Practically nontoxic. Oncorhynchus mykiss (rainbow trout) 56 d NOEC > 1.3 mg/l

Chronic toxicity to aquatic plants:

Harmful. Pseudokirchneriella subcapitata (green algae) 72 h NOEC = 0.44 mg/l

Data for Amide wax (Proprietary)**Aquatic toxicity data:**

No effect up to the limit of solubility. Oncorhynchus mykiss (rainbow trout) 96 h LC50 > 100 mg/l (nominal concentrations reported)

Aquatic invertebrates:

No effect up to the limit of solubility. Daphnia magna (Water flea) 48 h EC50 > 100 mg/l (nominal concentrations reported)

Algae:

No effect up to the limit of solubility. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 > 100 mg/l (nominal concentrations reported)

Microorganisms:

Respiration inhibition / Activated sludge 3 h EC50 > 100 mg/l

Chronic toxicity to aquatic invertebrates:

No effect up to the limit of solubility. Daphnia magna (Water flea) 21 d NOELR = 100 mg/l (Nominal concentration)

Data for Ethanol (64-17-5)

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Aquatic toxicity data:

Practically nontoxic. Pimephales promelas (fathead minnow) 96 h LC50 = 15,300 mg/l

Aquatic invertebrates:

Practically nontoxic. Ceriodaphnia dubia (water flea) 48 h LC50 = 5,012 mg/l

Algae:

Practically nontoxic. Chlorella vulgaris (Fresh water algae) 72 h ErC50 = 275 mg/l

Microorganisms:

Respiration inhibition / Activated sludge 3 h IC50 > 1,000 mg/l

Chronic toxicity to fish:

Practically nontoxic. Danio rerio (zebra fish) 120 h NOEC = 250 mg/l

Chronic toxicity to aquatic invertebrates:

Practically nontoxic. Reproduction Test / Daphnia magna (Water flea) 9 d NOEC = 9.6 mg/l

Chronic toxicity to aquatic plants:

Practically nontoxic. Chlorella vulgaris (Fresh water algae) 72 h ErC10 = 11.5 mg/l

Data for Benzene, ethyl- (100-41-4)**Aquatic toxicity data:**

Toxic. Oncorhynchus mykiss (rainbow trout) 96 h LC50 = 4.2 mg/l

Aquatic invertebrates:

Toxic. Daphnia magna (Water flea) 48 h EC50 = 1.8 mg/l

Algae:

Toxic. Pseudokirchneriella subcapitata (green algae) 96 h EC50 = 3.6 mg/l

Microorganisms:

Respiration inhibition / Nitrosomonas sp 24 h EC50 = 96 mg/l

Chronic toxicity to aquatic invertebrates:

Harmful. Reproduction Test / Ceriodaphnia dubia 7 d NOEC = 0.96 mg/l

Chronic toxicity to aquatic plants:

Practically nontoxic. Pseudokirchneriella subcapitata (green algae) 96 d NOEC = 3.4 mg/l

Data for Benzene, methyl- (108-88-3)**Aquatic toxicity data:**

Toxic to fish. Oncorhynchus kisutch (coho salmon) 96 h LC50 = 5.5 mg/l

Aquatic invertebrates:

Toxic to daphnia. Ceriodaphnia dubia (water flea) 48 h LC50 = 3.78 mg/l

Algae:

Practically nontoxic. Chlorella vulgaris (Fresh water algae) 3 h EC50 = 134 mg/l

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Microorganisms:

Respiration inhibition / Nitrosomonas sp 24 h EC50 = 84 mg/l

Chronic toxicity to fish:

Practically nontoxic. Oncorhynchus kisutch (coho salmon) 40 d NOEC = 1.39 mg/l

Chronic toxicity to aquatic invertebrates:

Harmful. Ceriodaphnia dubia 7 d NOEC = 0.74 mg/l

SECTION 13: DISPOSAL CONSIDERATIONS

Waste disposal:

Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

Take appropriate measures to prevent release to the environment.

SECTION 14: TRANSPORT INFORMATION

US Department of Transportation (DOT)

UN Number : 3175
Proper shipping name : Solids containing flammable liquid, n.o.s.
Technical name : (Xylenes, Ethanol)
Class : 4.1
Packaging group : II
Marine pollutant : no
Reportable quantity : 100 lbs (Xylene)
1000 lbs (Ethylbenzene)

International Maritime Dangerous Goods Code (IMDG)

UN Number : 3175
Proper shipping name : SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S.
Technical name : (XYLENES, ETHANOL)
Class : 4.1
Packaging group : II
Marine pollutant : no
Flash point : = 68 °F (20 °C) Setaflash closed cup

SECTION 15: REGULATORY INFORMATION

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Chemical Inventory Status

US. Toxic Substances Control Act	TSCA	The components of this product are all on the Active TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	All components of this product are listed or exempted
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	All components of this product are listed or exempted
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	All components of this product are listed or exempted
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	All components of this product are listed or exempted
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	All components of this product are listed or exempted
Australian Inventory of Industrial Chemicals	AU AIICL	All components of this product are listed or exempted
Taiwan Chemical Substance Inventory (TCSI)	TCSI	All components of this product are listed or exempted

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:

Acute Health Hazard, Chronic Health Hazard, Fire Hazard

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SARA Title III – Section 313 Toxic Chemicals:

The following components are subject to reporting levels established by SARA Title III, Section 313:

<u>Chemical name</u>	<u>CAS-No.</u>	<u>De minimis concentration</u>	<u>Reportable threshold:</u>
Xylene	1330-20-7	1.0 %	25000 lbs (Manufacturing and processing) 10000 lbs (Otherwise used (non-manufacturing/processing))
Benzene, ethyl-	100-41-4	0.1 %	10000 lbs (Otherwise used (non-manufacturing/processing)) 25000 lbs (Manufacturing and processing)
Benzene, methyl-	108-88-3	1.0 %	10000 lbs (Otherwise used (non-manufacturing/processing)) 25000 lbs (Manufacturing and processing)

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

<u>Chemical name</u>	<u>CAS-No.</u>	<u>Reportable quantity</u>
Xylene	1330-20-7	100 lbs
Benzene, ethyl-	100-41-4	1000 lbs
Benzene, methyl-	108-88-3	1000 lbs
Acetic acid ethyl ester	141-78-6	5000 lbs

United States – State Regulations

California Prop. 65

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

<u>Chemical name</u>	<u>CAS-No.</u>
Benzene, ethyl-	100-41-4

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California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Chemical name
Benzene, methyl-

CAS-No.
108-88-3

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H228 Flammable solid.
- H304 May be fatal if swallowed and enters airways.
- H312 Harmful in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.
- H335 + H336 May cause respiratory irritation, and drowsiness or dizziness.
- H336 May cause drowsiness or dizziness.
- H361 Suspected of damaging fertility or the unborn child.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H412 Harmful to aquatic life with long lasting effects.
- H413 May cause long lasting harmful effects to aquatic life.

Miscellaneous:

Other information: Refer to National Fire Protection Association (NFPA) Codes 30, 70, 77, and 497 and OSHA 29 CFR 1910.106, for safe handling.

Latest Revision(s):

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Nothing herein shall be construed as a license for the use of any product in a manner that might infringe any patent and it should not be construed as an inducement to infringe any patent. Please carefully review the Safety Data Sheet for the product.

The Company adheres to a strict policy that applies to the use of any of its products in medical device applications. This policy can be found at <https://www.arkema.com/global/en/social-responsibility/innovation-and-sustainable-solutions/responsible-product-management/medical-device-policy/> which is incorporated herein by reference and made a part hereof. Except as expressly authorized, the Company (i) has designated specific medical grade compositions for products used in medical device applications and Company products not so designated are not authorized for use in medical device applications and (ii) strictly prohibits the use of any of its products in medical device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Company does not design, manufacture and/or directly sell any medical devices. The Company does not co-design, or offer assistance to any purchaser of its products, in their design, manufacture and/or sale of products for medical devices. It is the sole responsibility of the manufacturer of medical devices to determine the suitability of all raw material, products and components, including any medical grade products, in order to ensure that the medical device is safe for end-use and complies with all applicable legal and regulatory requirements and to conduct all necessary tests and inspections.

Product code: 800295

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