SAFETY DATA SHEET

CRAYVALLAC® WS-4700

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® WS-4700
Synonyms: Not available
Molecular formula: Complex Mixture
Chemical family: Wax dispersion
Product use: Additive for :, Paints, Coatings, Inks, Adhesives

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: off-white
Physical state: liquid
Odor: alcohol-like

***Classification of the substance or mixture:**
Flammable liquids, Category 2, H225
Eye irritation, Category 2A, H319
Specific target organ toxicity - single exposure, Category 3, H336

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

GHS-Labelling

Hazard pictograms:

Signal word: **Danger**

Hazard statements:

H225 : Highly flammable liquid and vapour.
H319 : Causes serious eye irritation.
H336 : May cause drowsiness or dizziness.

Precautionary statements:

Prevention:
P210 : Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 : Keep container tightly closed.
P240 : Ground/bond container and receiving equipment.
P241 : Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 : Use only non-sparking tools.
P243 : Take precautionary measures against static discharge.
P261 : Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 : Wash skin thoroughly after handling.
P271 : Use only outdoors or in a well-ventilated area.
P280 : Wear protective gloves/ eye protection/ face protection.

Response:
P303 + P361 + P353 : IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
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.
P312 : Call a POISON CENTER/doctor if you feel unwell.
P337 + P313 : If eye irritation persists: Get medical advice/ attention.
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.
P403 + P235 : Store in a well-ventilated place. Keep cool.
P405 : Store locked up.

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

Supplemental information:

Potential Health Effects:
If swallowed may cause irritation of the digestive tract.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
2-Propanol	67-63-0	>= 50 - <= 70 %	H225, H319, H336
Paraffin waxes and Hydrocarbon waxes	8002-74-2	>= 30 - < 50 %	Not classified

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

4. FIRST AID MEASURES

4.1. Description of necessary first-aid measures:

Inhalation:
If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin:
In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. 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 unless directed to do so by medical personnel. 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) and Section 11 (Toxicology Information) of this SDS.

4.3. Indication of immediate medical attention and special treatment needed, if necessary:

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

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:
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:
When burned, the following hazardous products of combustion can occur:
Carbon oxides
Hazardous organic compounds
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.

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. 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.

7. HANDLING AND STORAGE

Handling

General information on handling:
Do not taste or swallow.
Avoid breathing vapor or mist.
Avoid contact with skin, eyes and clothing.
Keep away from heat, sparks and flames.
No smoking.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Check that all equipment is properly grounded and installed to satisfy electrical classification requirements.
Container hazardous when empty.
Follow label warnings even after container is emptied.
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.
Emptied container retains vapor and product residue.

Storage

General information on storage conditions:
Keep in a dry, cool place. Store in tightly closed container. Keep away from direct sunlight. Keep container closed when not in use. Store in upright position only. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. 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 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 stability – Period:
12 Months

Storage incompatibility – General:
Store separate from:
Acids
Oxidizing agents

Temperature tolerance – Do not store above:
86 °F (30 °C)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

2-Propanol (67-63-0)

US. ACGIH Threshold Limit Values

Time weighted average	200 ppm
Short Term Exposure Limit (STEL):	400 ppm

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

PEL:	400 ppm (980 mg/m3)

Paraffin waxes and Hydrocarbon waxes (8002-74-2)

US. ACGIH Threshold Limit Values

Form:	Fumes
Time weighted average	2 mg/m3

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 vapor or mist. 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 recommended). 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 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. Wear face shield and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing immediately and wash before reuse. Clean protective equipment before reuse. Wash thoroughly after handling.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	off-white
Physical state:	liquid
Odor:	alcohol-like
Odor threshold:	No data available.
Flash point	52 °F (11 °C) (Method: Seta Flash Method)
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:	0.85 g/cm3 (68 °F (20 °C))
Specific Gravity (Relative density):	0.85 (68 °F(20 °C))Water=1 (liquid)
Vapor pressure:	No data available.
Vapor density:	No data available.
Boiling point/boiling range:	No data available.
Melting point/range:	No data available.
Freezing point:	No data available.
Evaporation rate:	No data available.
Solubility in water:	No data available.
Viscosity, dynamic:	No data available.
Oil/water partition coefficient:	No data available.

Thermal decomposition: No data available.

Flammability: See GHS Classification in Section 2

10. STABILITY AND REACTIVITY

Stability:
This material is chemically stable under normal and anticipated storage, handling and processing conditions.

Hazardous reactions:
Hazardous polymerization 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
Hazardous organic compounds

11. TOXICOLOGICAL INFORMATION

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

Data for 2-Propanol (67-63-0)

Acute toxicity

Oral:
Practically nontoxic. (rat) LD50 = 5,840 mg/kg.

Dermal:
Practically nontoxic. (rabbit) LD50 = 12,870 mg/kg.

Inhalation:
Practically nontoxic. (rat) 6 h LC0 > 25.5 mg/l. (vapor)

Specific target organ toxicity - single exposure:
May cause drowsiness or dizziness.

Skin Irritation:
Not irritating. (rabbit) (4 h)

Eye Irritation:
Causes serious eye irritation. (rabbit)

Skin Sensitization:
Not a sensitizer. Buehler Test. (guinea pig) No skin allergy was observed

Repeated dose toxicity
Repeated inhalation administration to rat / affected organ(s): Haematopoietic system, kidney / signs: hyaline droplet nephropathy, changes in blood cell counts, changes in body weight, central nervous system depression, clinical chemistry changes

Repeated inhalation administration to mouse / signs: clinical chemistry changes, central nervous system depression, changes in body weight

Repeated dermal administration to rabbit / affected organ(s): skin / signs: irritation, damage / (extent of injury depends on severity of exposure)

Repeated drinking water administration to rat / affected organ(s): kidney, liver, adrenal gland / signs: changes in organ weights, hyaline droplet nephropathy, changes in body weight

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

Genotoxicity

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

Genotoxicity

Assessment in Vivo:
No genetic changes were observed in a laboratory test using: mice

Developmental toxicity
Exposure during pregnancy. oral (rat and rabbit) / No birth defects were observed. (levels produced toxic effects in the mothers and offspring)
Exposure during pregnancy. drinking water (rat) / Birth defects were observed. (at doses that produce effects in mothers)
Exposure during pregnancy. inhalation (rat) / Birth defects were observed. (at doses that produce effects in mothers)

Reproductive effects
Two-generation study. oral (rat) / Effects on offspring / (increased mortality in the offspring, levels produced toxic effects in the mothers and offspring)

Human experience
General:
Central nervous system effects: headache, nausea, dizziness, drowsiness, loss of consciousness. Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

Human experience
Inhalation:
Upper respiratory tract: Local irritation. (severity of effects depends on extent of exposure) (vapor)

Human experience
Skin contact:
Non-irritating. (studied using human volunteers)

Human experience
Eye contact:
Eyes: slightly irritating, moderately irritating. (severity of effects depends on extent of exposure) (vapor)

Data for Paraffin waxes and Hydrocarbon waxes (8002-74-2)

Acute toxicity

Oral:
Practically nontoxic. (rat) LD0 > 5,000 mg/kg.

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

Skin Irritation:
Practically non-irritating. (rabbit) Irritation Index: <= 1.5 / 8. (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 dietary administration to rat / affected organ(s): liver, lymph node, heart / signs: changes in blood cell counts, clinical chemistry changes, changes in organ weights, changes in organ structure or function

Carcinogenicity
Chronic dietary administration to rat / No increase in tumor incidence was reported.

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

Genotoxicity

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

Other information
The information presented is from representative materials in this chemical class. The results may vary depending on the test substance.

Human experience
Inhalation:
Upper respiratory tract: chest discomfort, irritation. (releases from hot processing) (dust or fume) (based on reports of occupational exposure to workers)

Human experience
Ingestion:
Gastro-intestinal tract: nausea, cramps, diarrhea. (severity of effects depends on extent of exposure)

12. ECOLOGICAL INFORMATION

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

Data for 2-Propanol (67-63-0)

Biodegradation:
Readily biodegradable. (5 d) biodegradation 53 %

Octanol Water Partition Coefficient:
log Pow: = 0.05

Photodegradation:
Degradation in the atmosphere

Data for Paraffin waxes and Hydrocarbon waxes (8002-74-2)

Biodegradation:
Inherently biodegradable. (28 d) biodegradation 78 - 84 %

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

Data for 2-Propanol (67-63-0)

Aquatic toxicity data:
Practically nontoxic. Pimephales promelas (fathead minnow) 96 h LC50 = 9,640 mg/l

Aquatic invertebrates:
Practically nontoxic. Crangon crangon (shrimp) 48 h EC50 = 1,400 mg/l

Algae:
Practically nontoxic. Desmodesmus quadricauda 7 d EC50 > 1,800 mg/l

Microorganisms:
Growth inhibition / Pseudomonas putida 16 h EC 3 > 1,050 mg/l

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.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT)

UN Number	:	1866
Proper shipping name	:	Resin solution
Class	:	3
Packaging group	:	II
Marine pollutant	:	no
Reportable quantity	:	100 lbs (Isopropanol)

International Maritime Dangerous Goods Code (IMDG)

UN Number	:	1866
Proper shipping name	:	RESIN SOLUTION
Class	:	3
Packaging group	:	II
Marine pollutant	:	no
Flash point	:	52 °F (11 °C)

15. REGULATORY INFORMATION

Chemical Inventory Status

US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Australia. Industrial Chemical (Notification and Assessment) Act	AICS	Conforms to
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL
Japan. Kashin-Hou Law List	ENCS (JP)	Conforms to
Korea. Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	PICCS (PH)	Conforms to
China. Inventory of Existing Chemical Substances	IECSC (CN)	Conforms to

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, Fire Hazard

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

Chemical name	CAS-No.	De minimis concentration	Reportable threshold:
2-Propanol	67-63-0	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):

Chemical name	CAS-No.	Reportable quantity
2-Propanol	67-63-0	100 lbs

United States – State Regulations

New Jersey Right to Know

Chemical name	CAS-No.
2-Propanol	67-63-0
Paraffin waxes and Hydrocarbon waxes	8002-74-2

New Jersey Right to Know – Special Health Hazard Substance(s)

Chemical name	CAS-No.
2-Propanol	67-63-0

Pennsylvania Right to Know

Chemical name	CAS-No.
2-Propanol	67-63-0
Paraffin waxes and Hydrocarbon waxes	8002-74-2

Pennsylvania Right to Know – Environmentally Hazardous Substance(s)

Chemical name	CAS-No.
2-Propanol	67-63-0

California Prop. 65
This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

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):

Reference number:	200001152
Date of Revision:	06/27/2018
Date Printed:	06/28/2018

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Arkema has implemented a Medical Policy regarding the use of Arkema products in Medical Devices applications that are in contact with the body or circulating bodily fluids (http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html) Arkema has designated Medical grades to be used for such Medical Device applications. Products that have not been designated as Medical grades are not authorized by Arkema for use in Medical Device applications that are in contact with the body or circulating bodily fluids. In addition, Arkema strictly prohibits the use of any Arkema 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 Arkema trademarks and the Arkema name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices , and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices.
It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any medical grade Arkema products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies) It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.