

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

L'Oreal USA Products, Inc.
111 Terminal Avenue
Clark, NJ 07066

L'Oreal Canada
4895 rue Hickmore
Ville St-Laurent, H4Y 1K5
Canada

Emergency Telephone Number

1-800-535-5053 US (International: 352-323-3500)
In Canada – 1-613-996-6666 (Canutec) (*666 cellular)

For further information:

1-732-499-2741

Poison Control Number: 412-390-3326



Product Name: Flammable Hair Colors containing Isopropyl Alcohol and Ethanolamine


Recommendations on use: Personal care product to be mixed with companion product(s) in accordance with instructions and applied to hair to aid in coloring.

Restrictions on use: Avoid fire, flame, heat and other sources of ignition. For external use only. Use only as directed. See product packaging/insert for skin allergy test conditions.

SECTION 2: HAZARDS IDENTIFICATION

Signal Word: DANGER

Symbol	Classification	Hazard Statement	Prevention Statements
	Flammable Liquid Category 3	Flammable Liquid and Vapor	<ul style="list-style-type: none"> Keep away from heat, sparks, open flames and hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical, ventilating, lighting, manufacturing and packaging equipment. Use only non-sparking tools. Take precautionary measures against static discharge.
	Eye Damage Category 1	Causes serious eye damage	<ul style="list-style-type: none"> Wear eye protection/face protection

	Skin Irritation Category 2	Causes skin irritation	<ul style="list-style-type: none"> Wash eyes and all skin surfaces contacted thoroughly after handling. Wear nitrile or vinyl gloves. Eye protection appropriate for the manufacturing operation being performed should be used (goggles or face shield).
See symbol above	Skin Sensitizer Category 1	May cause an allergic skin reaction	<ul style="list-style-type: none"> Avoid breathing mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace.

This material is considered hazardous by the US Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200)

General Precautionary Statements: Keep out of reach of children. Read label before use. Over-exposure may cause respiratory irritation.

Hazards Not Otherwise Classified: None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Only hazardous constituents associated with the product are listed below

<u>INGREDIENT:</u>	<u>CAS NO.</u>	<u>% WT</u>
Isopropyl Alcohol	67-63-0	≤ 10.0%
Deceth-3	66455-15-0	≤ 8.5%
Ethanolamine	141-43-5	≤ 1.0%
Resorcinol	108-46-3	≤ 1.0%
m-Aminophenol	591-27-5	≤ 1.0%
p-Phenylenediamine	106-50-3	≤ 1.0%
p-Aminophenol	123-30-8	≤ 1.0%
Sodium Metabisulfite	7681-57-4	≤ 1.0%

SECTION 4: FIRST AID MEASURES

Response Statements:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing until material is sufficiently removed from the eye. **If eye irritation persists:** Get medical advice/attention.

IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. **If skin irritation or rash persists:** Get medical attention. See product packaging/insert for additional information.

IF INHALED: Remove person to fresh air and keep in a position comfortable for breathing. Immediately call a Poison Control Center or doctor if person feels unwell.

IF SWALLOWED: Rinse mouth. Do not induce vomiting. Never give anything by mouth to an unconscious individual. Immediately call a Poison Control Center or doctor.

SYMPTOMS/EFFECTS: Causes severe eye damage. Causes skin irritation. May cause an allergic skin reaction. Over-exposure may cause respiratory irritation.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Consult product labeling. No special advice.

SECTION 5: FIRE-FIGHTING MEASURES

Notes for Non-Emergency Personnel:

EXTINGUISHING MEDIA: In case of fire use carbon dioxide, dry chemical, foam and/or water spray for extinction. Selection of a fire extinguisher should also be appropriate to address the location of the fire and equipment involved. Please review the tools available at your location to ensure proper availability of equipment.

Notes for those trained to participate in an emergency:

SPECIAL FIRE FIGHTING PROCEDURES: Follow National Fire Protection Association Guidelines or local guidelines appropriate for emergency response.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Observe all appropriate precautions for handling hazardous materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal degradation may produce oxides of carbon, hydrocarbons, and/or derivatives.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Notes for non-emergency personnel:

Consult trained response personnel for clean-up of large spills or locations where providing preliminary control of the chemical release is hazardous. Isolate the area and deny entry to unnecessary and unprotected. Hazardous locations include areas where ignition sources cannot be controlled. Sections 2, 5, 7 and 8 of this document should be consulted upon use of material, to become knowledgeable of the material's hazards and how to control risks associated with handling hazardous liquids.

If the location is not hazardous and only a small amount of material is spilled, control the release using absorbent pads while wearing the protective equipment as noted below. Care should be taken to prevent contact of the material with skin or eyes. Prohibit discharge to drains, soil, surface and ground waters. Dispose in accordance with section 13 of this document.

PERSONAL PROTECTIVE EQUIPMENT: Nitrile or Vinyl gloves, safety glasses/goggles, protective clothing (e.g. apron) may be required for clean-up of large spills. Respiratory protection is typically not necessary, but may be used depending upon the size of the spill and occupational exposure limits. Respiratory protection may include the use of organic vapor/acid gas cartridges. Refer to Section 8 for additional information.

Notes for those trained to participate in an emergency:

ACCIDENTAL RELEASE MEASURES: Eliminate all sources of ignition. Dike and contain the free liquid and absorb on vermiculite or spill pillows/pads. Place spent absorbents in UN specification drums for disposal. All precautions associated with controlling hazardous liquids should be employed during clean-up. Prohibit discharge to drains, soil, surface and ground waters. Inspection of all equipment used in response should occur before any re-use is considered.

Recommendations for personal protective equipment selection are noted above. Non-sparking tools should be utilized in all clean-up associated with hazardous liquids. Dispose in accordance with section 13 of this document.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:

Do not eat, drink or smoke while working with hazardous materials. Avoid contact with skin, eyes, and clothing. Employees should be advised to wear appropriate protective equipment in the manufacturing environment. Refer to Section 8 for protective equipment selection. All manufacturing should be performed indoors, in an enclosed environment. Employees should be advised not to handle hazardous products in close proximity to incompatible materials. Use only

non-sparking tools. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge.

Storage precautions for unpackaged product (manufacturing environment): Store in a well-ventilated place and keep cool. Keep containers closed when not in use. Minimize inventory. Use only non-sparking tools. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge. Appropriate fire suppression and detection equipment should be utilized. Store on spill pallets or other locations where spill containment will be easily accessible.

Maintain a clean work environment which includes use of properly functioning containers, proper housekeeping practices.

CONDITIONS FOR SAFE STORAGE:

Storage precautions for unpackaged product (manufacturing environment): Store in a cool and well-ventilated area. Store in original/compatible containers. Keep containers closed when not in use. This material should be “locked up” or stored in an area where production inventory may be controlled by authorized personnel. Appropriate fire suppression and detection equipment should be utilized. Store on spill pallets or in other locations where spill containment will be easily accessible and releases can be contained.

Storage precautions for packaged product – see consumer packaging.

Keep away from open drains and access to the environment.

Incompatible materials: Oxidizers, strong acids and organic compounds. Store away from incompatible materials.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS: These criteria have been published by the referenced authority to establish exposure limits in the work environment. Employee work areas should be monitored to ensure that permissible limits are not exceeded during the work day. These references do not coincide with product use. These references are meant to be in association with the manufacturing environment.

OCCUPATIONAL EXPOSURE VALUES:

Component Name (CAS-No.)	Reference	TWA		STEL/CEILING	
		ppm	mg/m ³	ppm	mg/m ³
Isopropyl Alcohol (67-63-0)	OSHA PEL	400	980	--	--
	ACGIH TLV	400	980	--	--
	NIOSH REL	400	980	500	1225
Ethanolamine (141-43-5)	OSHA PEL	3	6	--	--
	ACGIH TLV	3	7.5	6	15
	NIOSH REL	3	8	6	15
Resorcinol (108-46-3)	OSHA PEL	--	--	--	--
	ACGIH TLV	10	45	20	90
	NIOSH REL	10	45	20	90
p-Phenylenediamine (106-50-3)	OSHA PEL	--	0.1 (skin)	--	--
	ACGIH TLV	--	0.1	--	--
	NIOSH REL	--	0.1 (skin)	--	--
Sodium Metabisulfite (7681-57-4)	OSHA PEL	--	--	--	--
	ACGIH TLV	--	5	--	--
	NIOSH REL	--	--	--	--

Notes: ° (OSHA) – Total Dust

No occupational exposure values have been published for other constituents noted in Section 3.

WORK HYGIENIC PRACTICES: Ensure all work surfaces are maintained, to prevent contamination.

ENGINEERING CONTROLS: None required for product use. For handling large quantities of material, such as in the manufacturing of product, ventilation should be utilized. This ventilation should be compatible with the control of hazardous materials. Exhaust ventilation should be utilized to maintain air concentrations of material below the occupational exposure guidelines noted above.

Local exhaust ventilation is not typically required for product use. For handling large quantities of material, such as in the manufacturing of product -- Local Exhaust: Explosion proof. Mechanical (general): Explosion proof.

PERSONAL PROTECTIVE EQUIPMENT: Consistent with good hygiene practices, personal protective equipment (PPE) should be used in conjunction with other control measures including engineering controls, ventilation and isolation. See also Section 5 of this document for PPE advice, in the event of an emergency.

Eye/Face Protection (Non-Emergency): None required for product use. For handling of large quantities of liquid material, safety glasses with side shields/goggles are recommended.

Skin Protection (Non-Emergency): Gloves should be worn when mixing kit components and applying mixture. For handling large quantities of material, such as in product manufacturing, nitrile or vinyl gloves should be considered for use. Tyvek clothing may also be suitable for handling large quantities of material in the manufacturing environment.

Respiratory Protection (Non-Emergency): Respiratory protection is not required for product use. For manufacturing of product, respiratory protection may be considered. Ensure that the respirator meets current local occupational health and safety standards. Organic vapor/acid gas cartridges should be utilized with filtering respiratory protection.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Liquid
ODOR:	Not Available
ODOR THRESHOLD:	Not Available
pH:	9.0 – 10.0
MELTING/FREEZING POINT:	F: N/A C: N/A
BOILING POINT:	F: Not Available C: Not Available
FLASH POINT:	F: 104 - 122 C: 40 - 50 METHOD USED: Closed cup
EVAPORATION RATE:	> 1 (Butyl acetate = 1)
FLAMMABILITY:	Not Applicable to Liquids
FLAMMABLE LIMITS IN AIR:	ISOPROPYL ALCOHOL: (@200F) 12.7% UEL; 2.0% LEL ETHANOLAMINE: 23.5% UEL; 3.0% LEL
VAPOR PRESSURE (mmHg):	@ 70F: N/A @ 21 C: N/A
VAPOR DENSITY (AIR = 1):	@ 70F: N/A @ 21 C: N/A
RELATIVE DENSITY (H2O = 1):	Not Available

SOLUBILITY IN WATER: Not Available
PARTITION COEFFICIENT: Not Available
AUTOIGNITION TEMPERATURE: Not Available
DECOMPOSITION TEMPERATURE: Not Available
VISCOSITY: Not Available

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: Material is not considered reactive under typical handling and storage conditions.

STABILITY: Product is stable.

POSSIBILITY OF HAZARDOUS REACTIONS: None known. Hazardous polymerization is not expected to occur.

CONDITIONS TO AVOID: Heat, fire, flame and other sources of ignition.

INCOMPATIBILITY (MATERIAL TO AVOID): Oxidizers, strong acids and organic compounds.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon, hydrocarbons, and/or derivatives.

SECTION 11: TOXICOLOGICAL INFORMATION

Where information is not listed specifically for constituents, published information was not available.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS:

SKIN CORROSION/IRRITATION: Causes skin irritation

SERIOUS EYE DAMAGE/IRRITATION: Causes serious eye damage

RESPIRATORY/SKIN SENSITIZATION: May cause allergic skin reaction

INGESTION: Harmful if swallowed.

INHALATION: Over-exposure may cause respiratory irritation.

ROUTES OF EXPOSURE: Eyes, skin

SYMPTOMS: Causes severe eye damage. Causes skin irritation. May cause an allergic skin reaction. Over-exposure may cause respiratory irritation.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.

ACUTE TOXICOLOGY DATA FOR COMPONENTS

Material	Route	Species	Test Results
Isopropyl Alcohol	LC ₅₀	Rat	16,000 ppm
Isopropyl Alcohol	Oral LD ₅₀	Rat	5,045 mg/kg
Ethanolamine	Oral LD ₅₀	Rat (OECD 401 eq)	1,510 mg/kg bw
Deceth-3 (analogy)	Oral LD ₅₀	Rat	>2,000 mg/kg bw
Deceth-3 (analogy)	Dermal LD ₅₀	Rat	>2,000 mg/kg bw
Ethanolamine	Dermal LD ₅₀	Rat (OECD 402 eq)	2,504 mg/kg bw
Ethanolamine	Inh. LC ₅₀ (6hr)	Rat	>1,300 mg/m ³ air

Resorcinol	Oral LD ₅₀	Rat (OECD 401)	510 mg/kg bw
m-Aminophenol	Oral LD ₅₀	Rat (OECD 402)	>500 mg/kg bw
m-Aminophenol	Dermal LD ₅₀	Species unspecified	6,400 mg/kg
m-Aminophenol	Inh. LC ₅₀	Rat	1,162 mg/m ³
p-Phenylenediamine	Oral LD ₅₀	Rat (OECD 420)	75 mg/kg bw
p-Phenylenediamine	Inh. LC ₅₀ (4hr)	Rat (OECD 403)	0.92 mg/L
p-Phenylenediamine	Dermal LD ₅₀	Rabbit	>7,940 mg/kg bw
p-Aminophenol	Oral LD ₅₀	Rat (EPA OPPTS 870.1100)	671 mg/kg bw
p-Aminophenol	Inh. LC ₅₀ (4hr)	Rat OECD 403	>3.42 mg/L air
p-Aminophenol	Dermal LD ₅₀	Rabbit EPA OPPTS 870.1200	>8,000 mg/kg bw
Sodium Metabisulfite	Oral LD ₅₀	Rat (OECD 401)	1,540 mg/kg bw
Sodium Metabisulfite	Inh. LC ₅₀ (4hr)	Rat OECD 403	>5.5 mg/L air

Skin Corrosion/Irritation:

<i>Isopropyl Alcohol:</i>	Slight Irritant (Rat)
<i>Deceth-3</i>	Slightly Irritating (analogy)
<i>Ethanolamine:</i>	Corrosive (Rabbit, OECD 404)
<i>Resorcinol</i>	Not Irritating (Rabbit, OECD 404)
<i>m-Aminophenol</i>	Not Irritating (Rabbit, OECD 404)
<i>Toluene-2,5-Diamine</i>	Not Irritating
<i>p-Phenylenediamine</i>	Not Irritating (Rabbit)
<i>p-Aminophenol</i>	Not Irritating (Rabbit, OECD 404)
<i>Sodium Metabisulfite</i>	Not Irritating (Rabbit, OECD 404)

Serious Eye Damage/Irritation:

<i>Isopropyl Alcohol:</i>	Highly Irritating (Rat)
<i>Deceth-3:</i>	Corrosive
<i>Ethanolamine:</i>	Corrosive (Rabbit, OECD 405)
<i>Resorcinol</i>	Not Irritating (Rabbit, OECD 405)
<i>m-Aminophenol</i>	Not Irritating (Rabbit, OECD 405)
<i>Toluene-2,5-Diamine</i>	Irritating (Rabbit)
<i>p-Phenylenediamine</i>	Irritating (Rabbit, OECD 405)
<i>p-Aminophenol</i>	Not Irritating (Rabbit, OECD 405)
<i>Sodium Metabisulfite</i>	Irritating (Rabbit, OECD 405)

Respiratory Irritation:

<i>Isopropyl Alcohol:</i>	Irritating (Rat)
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Skin Sensitization:

<i>Isopropyl Alcohol:</i>	Slight Irritant (Rat)
<i>Deceth-3</i>	Not Sensitizing (Guinea Pig) (analogy)
<i>Ethanolamine:</i>	Not sensitizing (Guinea Pig)
<i>Resorcinol</i>	Sensitizing (Mouse) (OECD 429)
<i>m-Aminophenol</i>	Sensitizing (Mouse) (OECD 429)
<i>Toluene-2,5-Diamine</i>	Sensitizing (Guinea Pig) (OECD SIDS)
<i>p-Phenylenediamine</i>	Sensitizing (Mouse) (OECD 429)
<i>p-Aminophenol</i>	Sensitizing (Guinea Pig) (OECD 406)
<i>Sodium Metabisulfite</i>	Sensitizing (Mouse) (OECD 429)

CHRONIC HEALTH HAZARDS:

REPEAT DOSE TOXICITY:

NOAEL (Isopropyl Alcohol, inhalation, rats): 504 mg/kg
 LOAEL (Isopropyl Alcohol, inhalation, rats): 2,509 mg/kg
 NOAEL (Deceth-3 (analogy), oral): 80-400 mg/kg/day (Rat, OECD 408)
 NOAEL (Deceth-3 (analogy), dermal): 80 mg/kg/day (Rat, OECD 411)
 NOAEL (Ethanolamine, oral): 300 mg/kg bw/day (Rat, OECD 416)

NOAEL (Resorcinol, oral): 80 mg/kg/day (Rat, OECD 408)
 NOAEL (m-Aminophenol, oral): 20 mg/kg bw/day
 NOAEL (p-Phenylenediamine, oral): 16 mg/kg/day (Rat, OECD 408)
 NOAEL (m-Aminophenol, oral): 300 mg/kg bw/day (Rat, OECD 416)
 NOAEL (Sodium Metabisulfite, oral): 217 mg/kg bw/day (Rat)

CARCINOGENICITY:

Component Name (CAS-No.)	OSHA	ACGIH	NTP	IARC
Isopropyl Alcohol (67-63-0)	--	TLV-A4	--	IARC-3
Resorcinol (108-46-3)	--	TLV-A4	--	IARC-3
Toluene-2,5-diamine (95-70-5)	--	--	--	IARC-3
p-Phenylenediamine (106-50-3)	--	TLV-A4	--	IARC-3
Sodium Metabisulfite (7681-57-4)	--	TLV-A4	--	--

Notes:

ACGIH TLV-A4 – This reference indicates that the material is “Not Classifiable as a Human Carcinogen”.
 IARC-3 – This reference indicated that the material is “Unclassifiable as Carcinogenicity in Humans”

MUTAGENICITY:

Isopropyl Alcohol: A variety of *in vitro* and *in vivo* tests have produced negative results.
Deceth-3 A variety of *in vitro* tests have produced negative results. (analogy)
Ethanolamine: A variety of *in vitro* and *in vivo* tests have produced negative results.
Resorcinol *In vitro* tests (OECD 476) has produced positive results and *in vivo* (OECD 474) tests have produced negative results.
m-Aminophenol A variety of *in vitro* tests have produced negative results (OECD 473)
Toluene-2,5-Diamine A variety of *in vitro* tests have produced negative results
p-Phenylenediamine A variety of *in vitro* tests (OECD 471) has produced positive results with metabolic activation and *in vivo* tests (OECD 474) has produced negative results.
Sodium Metabisulfite A variety of *in vitro* tests have produced negative results (OECD 471)

REPRODUCTIVE TOXICITY:

Isopropyl Alcohol: In a multi-generation study, reproductive performance was not affected at any concentration.
Deceth-3 NOAEL: >250 mg/kg (Rat, OECD 416) (analogy)
Resorcinol NOAEL: >3000 mg/kg bw/day (Rat, OECD 416)
m-Aminophenol NOAEL: 10 mg/kg bw/day
p-Aminophenol NOAEL: 100 mg/kg/bw day (Rat, OECD 421)
Sodium Metabisulfite NOAEL: 942 mg/kg bw/ day (Rat)

DEVELOPMENTAL TOXICITY/TERATOGENICITY:

Isopropyl Alcohol: No development toxicity observed (OECD Guideline 414)
Deceth-3: NOAEL: >250 mg/kg (Rat, OECD 416) (analogy)
Ethanolamine: NOAEL: 450 mg/kg bw/day (Rat, OECD 414)
Resorcinol NOAEL: 250 mg/kg/day (Rat, OECD 414)
p-Phenylenediamine NOEL: 10 mg/kg/day
p-Aminophenol NOAEL: 100 mg/kg bw/day (Rat, OECD 421)
Sodium Metabisulfite NOAEL: 123 mg/kg bw/day (Rat, OECD 414)

SECTION 12: ECOLOGICAL INFORMATION

Contact with the environment should be avoided. Spills and leaks should be immediately cleaned up and removed. All precautions should be taken to prevent contact with the environment. Published information regarding ingredients listed on this document area found below; where data is not listed, documentation was unavailable.

ACUTE AND PROLONGED TOXICITY TO FISH

INGREDIENT NAME	TEST	RESULT	SPECIES	EXPOSURE
Isopropyl Alcohol	LC ₅₀	11,130 mg/l	Pimephas promelas	96 h
Deceth-3	LC ₅₀	11.5 mg/L	Oncorhynchus mykiss	96 h
Ethanolamine	LC ₅₀ (ASTM D1345-70)	170 mg/L	Carassius auratus	96 h
Resorcinol	LC ₅₀	29.5 mg/L	Pimephales promelas	96 h
m-Aminophenol	LC ₅₀	82.64 mg/L	Danio Rerio	96 h
p-Phenylenediamine	LC ₅₀	3.9 mg/L (OECD 203)	Oncorhynchus mykiss	96 h
p-Aminophenol	LC ₅₀	0.82 mg/L (OECD 203)	Oryzias latipes	96 h
Sodium Metabisulfite	LC ₅₀	681.2 mg/L (OECD 203)	Danio Rerio	96 h

ACUTE TOXICITY TO AQUATIC INVERTEBRATES

INGREDIENT NAME	TEST	RESULT	SPECIES	EXPOSURE
Isopropyl Alcohol	LC ₅₀	903 mg/l	Daphnia Magna	96 h
Deceth-3	EC ₅₀	5.1 mg/L	Daphnia Magna	48 h
Ethanolamine	EC ₅₀ (84/449/EEC C.2)	65 mg/L	Daphnia Magna	48 h
Resorcinol	EC ₅₀	4.7 mg/L (OECD 202)	Daphnia Magna	48 h
m-Aminophenol	EC ₅₀	1.1 mg/L	Daphnia magna	48 h
p-Phenylenediamine	EC ₅₀	0.33 mg/L (OECD 202)	Daphnia magna	48 h
p-Aminophenol	EC ₅₀	0.182 mg/l OECD Guideline 202	Daphnia magna	48 h
Sodium Metabisulfite	EC ₅₀	89 mg/L	Daphnia magna	48 h

TOXICITY TO AQUATIC PLANTS

INGREDIENT NAME	TEST	RESULT	SPECIES	EXPOSURE
Isopropyl Alcohol	EC ₅₀	>1,000 mg/l	Scenedesmus subspicatus (algae)	96 h
Ethanolamine	EL ₅₀ (92/69/EEC C.3)	15 mg/L	Green Algae	72 h
Resorcinol	EC ₅₀	> 97 mg/L (OECD 201)	Pseudokirchneriella Subcapitata	72 h
m-Aminophenol	EC ₅₀	62 mg/L (OECD 201)	Pseudokirchnerella Subcapitata	72 h
p-Phenylenediamine	EC ₅₀	0.27 mg/L	Pseudokirchnerella Subcapitata	72 h
p-Aminophenol	EC ₅₀	> 0.253 mg/l (OECD 201)	Desmodesmus Subspicatu	72 h
Sodium Metabisulfite	EC ₅₀	43.8 mg/L (OECD 201)	Desmodesmus subspicatu	72 h

TOXICITY TO MICROORGANISMS

INGREDIENT NAME	TEST	RESULT	SPECIES	EXPOSURE
Isopropyl Alcohol	EC ₅₀	41,676 mg/l	Bacteria (activated sludge)	30 days
Ethanolamine	EC ₁₀ (OECD 209)	> 1,000 mg/L	Activated Sludge	30 min
Resorcinol	EC ₅₀	79 mg/L (OECD 209)	Activated Sludge	3 h
m-Aminophenol	EC ₅₀	2.55-2.9 mg/L	Tetrahymena thermophila	48 h
p-Phenylenediamine	EC ₅₀	100 mg/L	Activated Sludge	3 h

p-Aminophenol	EC ₅₀	29.9 mg/L (OECD 209)	Activated sludge	3 h
Sodium Metabisulfite	EC ₅₀	>1000 mg/L(OECD 209)	Activated sludge	3 h

PERSISTENCY AND DEGRADABILITY:

<i>Isopropyl Alcohol:</i>	Readily Biodegradable – Half life: 1 - 10 days).
<i>Deceth-3</i>	Readily Biodegradable – OECD 301
<i>Ethanolamine:</i>	Readily Biodegradable – OECD 301 A – >90% (21 d)
<i>Resorcinol</i>	Readily Biodegradable – OECD 301 C
<i>m-Aminophenol</i>	Readily Biodegradable – Half life: 15 days
<i>Toluene-2,5-Diamine</i>	Non-Biodegradable
<i>p-Phenylenediamine</i>	Readily biodegradable (OECD 301 D)

BIOACCUMULATIVE POTENTIAL:

<i>Isopropyl Alcohol:</i>	Not expected to bioaccumulate.
<i>Deceth-3</i>	Not expected to bioaccumulate (analogy)
<i>Ethanolamine</i>	log Pow: -1.91 @ 25°C (OECD 107) – Not expected to bioaccumulate
<i>Resorcinol</i>	BCF: 3.162 – Not expected to bioaccumulate
<i>m-Aminophenol</i>	BCF: 3.2 – Not expected to bioaccumulate
<i>p-Phenylenediamine</i>	BCF = 0.3. Not expected to bioaccumulate
<i>p-Aminophenol</i>	log koc: 1.96 – Low bioaccumulation potential

SECTION 13: DISPOSAL CONSIDERATIONS

Those responsible for the performance of disposal, recycling or reclamation activities should refer to Section 8 of this document for advice on personal protective equipment and exposure controls.

WASTE DISPOSAL CONTAINERS: Appropriate US DOT containers should be utilized which may include cardboard boxes for products or plastic drums for bulk liquids. These containers should meet the packaging specifications required for DOT compliance.

WASTE DISPOSAL METHOD: As manufactured, this product does not exhibit any RCRA characteristics of hazardous waste. Controlled incineration at a licensed waste facility is the recommended technology for treatment and disposal. Material must not be disposed of through sewage.

RCRA HAZARD CLASS: Not Regulated

Follow all local governmental requirements intended for disposal.

SECTION 14: TRANSPORT INFORMATION

North American Ground Transportation

- **IN CONSUMER PACKAGING:** Not Regulated
- **OTHER THAN CONSUMER PACKAGING:** Not Regulated

Transport Via Water

- **IN CONSUMER PACKAGING:** Not Regulated
- **OTHER THAN CONSUMER PACKAGING:** Not Regulated

Transport Via Air (Domestic/International)

- **IN CONSUMER PACKAGING:** Not Regulated
- **OTHER THAN CONSUMER PACKAGING:** Not Regulated

Please be aware of carrier transport variations before shipping hazardous materials.

SECTION 15: REGULATORY INFORMATION

National Fire Protection Association Codes: Health: 3 Fire: 1 Reactivity: 0 Other: None

Workplace Hazardous Materials Identification System: Class E; Corrosive Material

This regulatory information represents the product, in its consumer packaging.

SECTION 16: OTHER INFORMATION

PREPARATION INFORMATION: This is the first issuance of this document.

Author: Lalita Vedantam (Corporate Regulatory Services)