L'ORÉAL USA

SAFETY DATA SHEET

SDS # 15-172

ISSUANCE DATE: May 20, 2015

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: Permanent Oxidative Hair Colors containing Ammonia & 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: 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
	Eye Damage Category 1	Causes serious eye damage	• Wear eye protection appropriate for the manufacturing operation being performed (goggles or face shield).
	Skin Sensitizer Category 1	May cause an allergic skin reaction	• Avoid breathing mist/vapors/spray. • Contaminated work clothing must not be allowed out of the workplace. • Wear nitrile or vinyl gloves
See symbol above	Skin Irritation Category 2	Causes skin irritation	• Wash eyes and all skin surfaces contacted thoroughly after handling.

See symbol above	Acute Toxicity Oral Category 4	Harmful if swallowed	• Do not eat, drink or smoke when using this product

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. Causes serious eye damage. May cause an allergic skin reaction. Causes skin irritation. Harmful if swallowed. 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

INGREDIENT:	CAS NO.	% WT
Ammonium Hydroxide	1336-21-6	≤ 7.0%
Ethanolamine	141-43-5	≤ 6.0%
Deceth-3	66455-15-0	≤ 9.0%
Laureth-12	68439-50-9	≤ 7.0%
Titanium Dioxide	13463-67-7	≤ 1.0%
Resorcinol	108-46-3	≤ 2.0%
m-Aminophenol	591-27-5	≤ 2.0%
Toluene-2,5-Diamine	95-70-5	≤ 2.0%
p-Phenylenediamine	106-50-3	≤ 1.5%
Sodium Metabisulfite	7681-57-4	≤ 1.0%
p-Aminophenol	123-30-8	≤ 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 for at least 20 minutes or until material is sufficiently removed from the eye. **If eye irritation persists:** Get medical advice/attention if irritation or other symptoms occur.

IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. **If skin irritation 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 is 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 serious eye damage. May cause an allergic skin reaction. Causes skin irritation. Harmful if swallowed. 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: 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. 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.

Storage precautions for unpackaged product (manufacturing environment): Store in a well-ventilated place. Keep cool. Minimize inventory. Keep container tightly closed. It is suggested that this material 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 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
Ethanolamine (141-43-5)	OSHA PEL	3	6	--	--
	ACGIH TLV	3	7.5	6	15
	NIOSH REL	3	8	6	15
Titanium Dioxide (13463-67-7)	OSHA PEL	--	15º	--	--
	ACGIH TLV	--	10	--	--
	NIOSH REL	--	--	--	--
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: º (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:	Clear to yellow liquid/cream
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:** >212 **C:** >100 **METHOD USED:** Closed cup
EVAPORATION RATE:	> 1 **(Butyl acetate = 1)**
FLAMMABILITY:	Not Applicable to Liquids
FLAMMABLE LIMITS IN AIR:	AMMONIA: 28% UEL; 15% LEL ETHANOLAMINE: 23.5% UEL; 3.0% LEL
VAPOR PRESSURE (mmHg):	@ 70F: Not Available @ 21 C: Not Available
VAPOR DENSITY (AIR = 1):	@ 70F: >1 @ 21 C: > 1
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 an allergic skin reaction.
INGESTION: Harmful if swallowed.
INHALATION: Over-exposure may cause respiratory irritation.

ROUTES OF EXPOSURE: Eyes, skin

SYMPTOMS: Causes serious eye damage. May cause an allergic skin reaction. Causes skin irritation. Harmful if swallowed. Over-exposure may cause respiratory irritation.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.

ACUTE TOXICOLOGY DATA FOR COMPONENTS

Material	Route	Species	Test Results
Ammonium Hydroxide	Oral LD_{50}	Rat (OECD 401)	350 mg/kg
Ammonium Hydroxide	Inh. LC_{50} (1h)	Rat	11,590 mg/L air
Ethanolamine	Oral LD_{50}	Rat (OECD 401 eq)	1,510 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
Deceth-3 (analogy)	Oral LD_{50}	Rat	>2,000 mg/kg bw
Deceth-3 (analogy)	Dermal LD_{50}	Rat	>2,000 mg/kg bw
Laureth-12	Oral LD_{50}	Rat (OECD 401)	>2,000 mg/kg bw
Laureth-12	Inh. LC_{50} (4hr)	Rat (OECD 403)	>1.6 mg/L air (nominal)
Laureth-12	Dermal LD_{50}	Rat (OECD 402)	>2,000 mg/kg bw
Titanium Dioxide	Oral LD_{50}	Rat	>5,000 mg/kg bw
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

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
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

Skin Corrosion/Irritation:

Ammonium Hydroxide	Irritating (5-10%); Corrosive (≥ 10%)
Ethanolamine:	Corrosive (Rabbit, OECD 404)
Deceth-3	Slightly Irritating (analogy)
Laureth-12	Not Irritating (Rabbit, OECD 404)
Titanium Dioxide	Not Irritating (Rabbit)
Resorcinol	Not Irritating (Rabbit, OECD 404)
m-Aminophenol	Not Irritating (Rabbit, OECD 404)
Toluene-2,5-Diamine	Not Irritating
p-Phenylenediamine	Not Irritating (Rabbit)
Sodium Metabisulfite	Not Irritating (Rabbit, OECD 404)
p-Aminophenol	Not Irritating (Rabbit, OECD 404)

Serious Eye Damage/Irritation:

Ammonium Hydroxide	Corrosive (Rabbit)
Ethanolamine:	Corrosive (Rabbit, OECD 405)
Deceth-3:	Corrosive
Laureth-12	Irritating (Rabbit, OECD 405)
Titanium Dioxide	Not Irritating (Rabbit)
Resorcinol	Not Irritating (Rabbit, OECD 405)
m-Aminophenol	Not Irritating (Rabbit, OECD 405)
Toluene-2,5-Diamine	Irritating (Rabbit)
p-Phenylenediamine	Irritating (Rabbit, OECD 405)
Sodium Metabisulfite	Irritating (Rabbit, OECD 405)
p-Aminophenol	Not Irritating (Rabbit, OECD 405)

Respiratory Irritation:

Ammonium Hydroxide	Highly Irritating (>50 ppm) (Human)

Skin Sensitization:

Ammonium Hydroxide	Not Sensitizing (Guinea Pig)
Ethanolamine:	Not sensitizing (Guinea Pig)
Deceth-3	Not Sensitizing (Guinea Pig) (analogy)
Laureth-12	Not sensitizing (Guinea Pig) (OECD 406)
Resorcinol	*S*ensitizing *(*Mouse) (OECD 429)
m-Aminophenol	*S*ensitizing *(*Mouse) (OECD 429)
Toluene-2,5-Diamine	*S*ensitizing (Guinea Pig) (OECD SIDS)
p-Phenylenediamine	Sensitizing *(*Mouse) (OECD 429)
Sodium Metabisulfite	*S*ensitizing *(*Mouse) (OECD 429)
p-Aminophenol	*S*ensitizing (Guinea Pig) (OECD 406)

CHRONIC HEALTH HAZARDS:

REPEAT DOSE TOXICITY:

NOAEL (Ethanolamine, oral): 300 mg/kg bw/day (Rat, OECD 416)
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 (Laureth-12, oral): > 500 mg/kg bw (Rat, OECD 408)
NOAEL (Titanium Dioxide, oral, rat): 24,000 mg/kg
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 (Sodium Metabisulfite, oral): 217 mg/kg bw/day (Rat)
NOAEL (m-Aminophenol, oral): 300 mg/kg bw/day (Rat, OECD 416)

CARCINOGENICITY:

Component Name (CAS-No.)	OSHA	ACGIH	NTP	IARC
Titanium Dioxide (13463-67-7)	--	TLV-A4	--	IARC-2B
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-2B – This reference indicates that the material is "Possibly Carcinogenic to Humans"
IARC-3 – This reference indicated that the material is "Unclassifiable as Carcinogenicity in Humans"

MUTAGENICITY:

Ammonium Hydroxide	A variety of *in vitro* test have produced negative results.
Ethanolamine:	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)
Laureth-12	A variety of *in vitro* (OECD 471) and *in vivo* (OECD 475) have produced negative results.
Titanium Dioxide	A variety of *in vitro* 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 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:

Ethanolamine:	NOAEL: 300 mg/kg bw/day (Rat, OECD 416)
Deceth-3	NOAEL: >250 mg/kg (Rat, OECD 416) (analogy)
Laureth-12	NOAEL: >250 mg/kg bw/day (Rat, OECD 416)
Resorcinol	NOAEL: >3000 mg/kg bw/day (Rat, OECD 416)
m-Aminophenol	NOAEL: 10 mg/kg bw/day
Sodium Metabisulfite	NOAEL: 942 mg/kg bw/ day (Rat)
p-Aminophenol	NOAEL: 100 mg/kg/bw day (Rat, OECD 421)

DEVELOPMENTAL TOXICITY/TERATOGENICITY:

Ethanolamine:	NOAEL: 450 mg/kg bw/day (Rat, OECD 414)
Deceth-3:	NOAEL: >250 mg/kg (Rat, OECD 416) (analogy)
Laureth-12	NOAEL: >250 mg/kg bw/day (Rat, OECD 416)
Resorcinol	NOAEL: 250 mg/kg/day (Rat, OECD 414)
p-Phenylenediamine	NOEL: 10 mg/kg/day
Sodium Metabisulfite	NOAEL: 123 mg/kg bw/day (Rat, OECD 414)
p-Aminophenol	NOAEL: 100 mg/kg bw/day (Rat, OECD 421)

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
Ammonium Hydroxide	LC_{50}	1.73 mg/L	Lepomis cyanellus	96 h
Ethanolamine	LC_{50} (ASTM D1345-70)	170 mg/L	Carassius auratus	96 h
Deceth-3	LC_{50}	11.5 mg/L	Oncorhynchus mykiss	96 h
Laureth-12	LC_{50}	1.1 mg/L (OECD 203)	Oncorhynchus mykiss	96 h
Titanium Dioxide	LC_{50}	>1,000 mg/L	Leuciscusidus idus	48 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
Sodium Metabisulfite	LC_{50}	681. 2 mg/L (OECD 203)	Danio Rerio	96 h
p-Aminophenol	LC_{50}	0.82 mg/L (OECD 203)	Oryzias latipes	96 h

ACUTE TOXICITY TO AQUATIC INVERTEBRATES

INGREDIENT NAME	TEST	RESULT	SPECIES	EXPOSURE
Ammonium Hydroxide	EC_{50}(ASTM E729-80)	101 mg/L	Daphnia Magna	48 h
Ethanolamine	EC_{50} (84/449/EEC C.2)	65 mg/L	Daphnia Magna	48 h
Deceth-3	EC_{50}	5.1 mg/L	Daphnia Magna	48 h
Laureth-12	EC_{50}	>2 mg/L (OECD 202)	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
Sodium Metabisulfite	EC_{50}	89 mg/L	Daphnia magna	48 h
p-Aminophenol	EC_{50}	0.182 mg/l OECD Guideline 202	Daphnia magna	48 h

TOXICITY TO AQUATIC PLANTS

INGREDIENT NAME	TEST	RESULT	SPECIES	EXPOSURE
Ethanolamine	EL_{50} (92/69/EEC C.3)	15 mg/L	Green Algae	72 h
Laureth-12	EC_{50}	0.41 mg/L (OECD 102)	Pseudokirchneriella Subcapitata	72 h
Titanium Dioxide	EC_{50}	61 mg/L	Pseudokirchneriella Subcapitata	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
Sodium Metabisulfite	EC_{50}	43.8 mg/L (OECD 201)	Desmodesmus subspicatu	72 h
p-Aminophenol	EC_{50}	> 0.253 mg/l (OECD 201)	Desmodesmus Subspicatu	72 h

TOXICITY TO MICROORGANISMS

INGREDIENT NAME	TEST	RESULT	SPECIES	EXPOSURE
Ethanolamine	EC_{10} (OECD 209)	> 1,000 mg/L	Activated Sludge	30 min
Laureth-12	EC_{50}	>10 g/L	Pseudomonas putida	16.9 h
Titanium Dioxide	EC_{50}	5-30 mg/L	Activated Sludge	3 h
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
Sodium Metabisulfite	EC_{50}	>1000 mg/L(OECD 209)	Activated sludge	3 h
p-Aminophenol	EC_{50}	29.9 mg/L (OECD 209)	Activated sludge	3 h

PERSISTENCY AND DEGRADABILITY:

Ammonium Hydroxide	Expected to be Readily Biodegradable (Converts to nitrates)
Ethanolamine:	Readily Biodegradable – OECD 301 A – >90% (21 d)
Deceth-3	Readily Biodegradable – OECD 301
Laureth-12	Readily Biodegradable – OECD 301
Resorcinol	Readily Biodegradable – OECD 301 C
m-Aminophenol	Readily Biodegradable – Half life: 15 days
Toluene-2,5-Diamine	Non-Biodegradable
p-Phenylenediamine	Readily biodegradable (OECD 301 D)

BIOACCUMULATIVE POTENTIAL:

Ammonium Hydroxide	Not Applicable
Ethanolamine	log Pow: -1.91 @ 25^{o}C (OECD 107) – Not expected to bioaccumulate
Deceth-3	Not expected to bioaccumulate (analogy)
Resorcinol	BCF: 3.162 – Not expected to bioaccumulate
m-Aminophenol	BCF: 3.2 – Not expected to bioaccumulate
p-Phenylenediamine	BCF = 0.3. Not expected to bioaccumulate
p-Aminophenol	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: 2 Reactivity: 0 Other: None

Workplace Hazardous Materials Identification System: Class E; Corrosive Material (Eye); Class D; Division 2, Subdivision B – Skin Irritation/Skin sensitization

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

SECTION 16: OTHER INFORMATION

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

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