L'ORÉAL USA

SAFETY DATA SHEET

SDS # 99-029

ISSUANCE DATE: April 25, 2019

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: High Volume (30 – 40 Vol.) Hair Developers

Recommendations on use: Personal care product to be mixed with companion products in accordance with instructions and applied to hair.

Restrictions on use: Refer to product insert/container for use warnings. For external use only. Use only as directed.

SECTION 2: HAZARDS IDENTIFICATION

Signal Word: DANGER

Symbol	Classification	Hazard Statement	Prevention Statements
	Serious Eye Damage Category 1	Causes serious eye damage	• Wash hands, face and all skin surfaces contacted thoroughly after handling. • Wear eye protection appropriate for the manufacturing operation being performed (goggles or face shield).
	Oxidizing Liquid Category 3	May intensify fire, oxidizer	• Keep away from heat. • Keep/Storage away from combustibles (e.g. paper), organics, and metals (e.g. iron). • Take precaution to avoid mixing with combustible and organic materials. • Wear nitrile or vinyl gloves.

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 insert/label before use. Over-exposure may cause skin dryness or slight irritation. Prolonged contact may lighten skin.

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
Hydrogen Peroxide	7722-84-1	9 – 12%

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:** Immediately call a poison control center or get medical advice/attention.

IF ON SKIN: If skin irritation occurs: Wash with plenty of water. Remove all contaminated clothing and launder before reuse. **If skin irritation persists:** Get medical attention. In cases where discomfort persists and/or medical attention is sought, do not use hair color products until the nature of the skin reaction and the causative agent has been identified.

IF INHALED: Remove person to fresh air and keep in a position comfortable for breathing. Call a poison control center if you feel unwell.

IF SWALLOWED: Do not induce vomiting. Never give anything by mouth to an unconscious individual. Consult a physician or poison control center immediately.

SYMPTOMS/EFFECTS: Causes serious eye damage. Over-exposure may cause skin dryness or slight 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: Decomposition may yield oxygen and increase the burning rate of flammable/combustible materials. Observe all appropriate precautions for handling hazardous materials.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal degradation may produce oxides of carbon, hydrocarbons, and/or derivatives. Decomposition may release oxygen which can intensify fires.

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. Hazardous locations include areas where ignition sources cannot be controlled. Isolate the area and deny entry to unnecessary and unprotected personnel. 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 associated risks.

If the location is not hazardous and only a small amount of material is released, dilute with water and absorb liquid with noncombustible material while wearing the protective equipment as noted below. Clean the area with detergent and water. If potentially combustible materials (e.g. paper towels, sponges, mops) are used, rinse thoroughly prior to disposal or storage. 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 used depending upon the size of the spill and occupational exposure limits. 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. Residual product on towels, sponges, or mops may create a combustion hazard. Thoroughly rinse potentially combustible materials prior to disposal or storage. Place spent absorbents in UN specification drums for disposal. Wash area completely with water. Take care to avoid contact with wet surfaces or walkways that may become slick when residue is present. Prohibit discharge to drains, soil, surface and ground waters.

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. See section 8 of this document for protective equipment selection. Avoid contamination with combustible organic materials (e.g. oil, sawdust, damp paper towels, etc…), metal, powder or reducing agents. All manufacturing should be performed indoors, in an enclosed environment.

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 original container in a well-ventilated place and keep cool. Keep containers closed when not in use. Do not store any tint, lightener lotion or bleach powder after it has been mixed with developer. Store separately from combustible materials. Minimize inventory. Appropriate fire suppression and detection equipment should be utilized. Store on spill pallets or other locations where spill containment will be easily accessible.

Storage precautions for packaged product: See consumer packaging.

Keep away from open drains and access to the environment.

Incompatible materials: Combustibles (e.g. wood, paper, oil), organics (e.g. alcohols, glycerols, etc…), metals (e.g. iron, copper, metal alloys) and reducing agents. 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
Hydrogen Peroxide (7722-84-1)	OSHA PEL	1	1.4	--	--
	ACGIH TLV	1	1.4	--	--
	NIOSH REL	1	1.4	--	--

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 oxidizing 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 hair color 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

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White liquid/cream

ODOR: No fragrance

ODOR THRESHOLD: Not Available

pH: >2.0 – ≤4.3

MELTING/FREEZING POINT: **F:** ~32 **C:** ~0

BOILING POINT: **F:** ~212 **C:** ~100

FLASH POINT: **F:** Not Applicable **C:** Not Applicable **METHOD USED:**

EVAPORATION RATE: < 1 **(Butyl acetate = 1)**

FLAMMABILITY: Not Applicable

FLAMMABLE LIMITS IN AIR: Not Applicable

VAPOR PRESSURE (mmHg): Not Available

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: Contained material may show increases in pressure upon exposure to radiant heat (sunlight) or sources of ignition.

STABILITY: Product is stable.

POSSIBILITY OF HAZARDOUS REACTIONS: Contact with combustible materials may lead to combustion hazard. Hazardous polymerization is not expected to occur.

CONDITIONS TO AVOID: Heat and sunlight. Contamination with incompatibles.

INCOMPATIBILITY (MATERIAL TO AVOID): Combustibles (e.g. wood, paper, oil), organics (e.g. alcohols, glycerols, etc…), metals (e.g. iron, copper, metal alloys) and reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal degradation may produce oxides of carbon, hydrocarbons, and/or derivatives. Decomposition may release oxygen which can intensify fires.

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: Over-exposure may cause skin dryness or slight irritation
SERIOUS EYE DAMAGE/IRRITATION: Causes serious eye damage
RESPIRATORY/SKIN SENSITIZATION: None expected
INGESTION: None expected
INHALATION: None expected

ROUTES OF EXPOSURE: Inhalation, eyes, skin, ingestion

SYMPTOMS: Causes serious eye damage. Over-exposure may cause skin dryness or slight irritation. Prolonged contact may lighten skin.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Pre-existing dermatitis made be made worse by exposure.

ACUTE TOXICOLOGY DATA FOR COMPONENTS

Material	Route	Species	Test Results
Hydrogen Peroxide (10%)	Oral LD_{50}	Rat	>5,000 mg/kg
Hydrogen Peroxide (70%)	Dermal LD_{50}	Rabbit	9,200 mg/kg
Hydrogen Peroxide (35%)	Dermal LD_{50}	Rabbit	>2,000 mg/kg
Hydrogen Peroxide (50%)	LC_{50} (4 hr, vapor)	Rat	170 mg/m^3

Skin Corrosion/Irritation:
Hydrogen Peroxide: Not Irritating (<35%); Irritating (35-50%); Corrosive (>50%) (Rat, OECD 405)

Serious Eye Damage/Irritation:
Hydrogen Peroxide: Irritating (≤ 8%); Corrosive (>8%) (Rat, OECD 404)

Respiratory Irritation:
No Data

Skin Sensitization:
Hydrogen Peroxide: Not Sensitizing (Guinea Pig, OECD 406)

CHRONIC HEALTH HAZARDS:

REPEAT DOSE TOXICITY:
NOAEL (Hydrogen Peroxide, oral): 26 mg/kg/bw/day (100 ppm) (Mouse, 90d, OECD 408)
NOAEL (Hydrogen Peroxide, inh.): 2.9 mg/m^3 air (Rat, 28d, OECD 412)

CARCINOGENICITY:

Component Name (CAS-No.)	OSHA	ACGIH	NTP	IARC
Hydrogen Peroxide (7722-84-1)	**--**	**TLV-A3**	**--**	**IARC-3**

ACGIH TLV-A3 - This reference indicates that the material is "Confirmed Animal Carcinogen with Unknown Relevance to Humans".
IARC-3 **-** This reference indicates that the material is "Unclassifiable as to Carcinogenicity to Humans".

MUTAGENICITY:
Hydrogen Peroxide: A variety of *in vivo* tests have produced negative results. High percentages have produced positive responses under *in vitro* test systems.

REPRODUCTIVE TOXICITY:
No Data

DEVELOPMENTAL TOXICITY/TERATOGENICITY:
No Data

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
Hydrogen Peroxide	LC_{50} (US EPA Method)	16.4 mg/L	Pimephales promelas	96 h

ACUTE TOXICITY TO AQUATIC INVERTEBRATES

INGREDIENT NAME	TEST	RESULT	SPECIES	EXPOSURE
Hydrogen Peroxide	EC_{50} (US EPA Method)	2.4 mg/L	Daphnia pulex	48 h

TOXICITY TO AQUATIC PLANTS

INGREDIENT NAME	TEST	RESULT	SPECIES	EXPOSURE
Hydrogen Peroxide	EC_{50} (OECD 201)	2.5 mg/L	Chlorella vulgaris	72 h

TOXICITY TO MICROORGANISMS

INGREDIENT NAME	TEST	RESULT	SPECIES	EXPOSURE
Hydrogen Peroxide	EC_{50} (OECD 209)	466 mg/L	Activated Sludge	30 min

PERSISTENCY AND DEGRADABILITY:
Hydrogen Peroxide: Readily Biodegradable – OECD 209 – >99% (30 min)

BIOACCUMULATIVE POTENTIAL:
Hydrogen Peroxide: log Kow: -1.57 (Est.) – No bioaccumulation expected

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: Containers should be completely closed and meet applicable USDOT packaging specifications. Appropriate containers should be utilized which may include fiberboard boxes for products and plastic/lined drums for bulk liquids.

WASTE DISPOSAL METHOD: This product is ignitable (D001) RCRA hazardous wastes when intended for disposal. Physical and/or chemical deactivation at a hazardous waste facility is the recommended technology for treatment and disposal. This material must not be disposed through sewage.

RCRA HAZARD CLASS: D001

Follow all local governmental requirements intended for disposal.

SECTION 14: TRANSPORT INFORMATION

North American Ground Transportation

- **IN CONSUMER PACKAGING:** Limited Quantity/Consumer Commodity (≤ 5 L)
  UN ID Number: UN 2984
  Proper Shipping Name: Hydrogen peroxide, aqueous solutions
  Hazard Class: 5.1
  Packing Group: III
  Label Statements: Exempt – Limited Quantity Marking Only

- **OTHER THAN CONSUMER PACKAGING:**
  UN ID Number: UN 2984
  Proper Shipping Name: Hydrogen peroxide, aqueous solutions
  Hazard Class: 5.1
  Packing Group: III
  Label Statements: Oxidizer (Division 5.1)

Transport Via Water

- **IN CONSUMER PACKAGING:** Limited Quantity (≤ 5 L)
  UN ID Number: UN 2984
  Proper Shipping Name: Hydrogen peroxide, aqueous solutions
  Hazard Class: 5.1
  Packing Group: III
  Label Statements: Exempt – Limited Quantity Marking Only

- **OTHER THAN CONSUMER PACKAGING:**
  UN ID Number: UN 2984
  Proper Shipping Name: Hydrogen peroxide, aqueous solutions
  Hazard Class: 5.1
  Packing Group: III
  Label Statements: Oxidizer (Division 5.1)

Transport Via Air (Domestic/International)

- **IN CONSUMER PACKAGING:** Limited Quantity (≤ 0.5 L) (*Not eligible for ID 8000, Consumer Commodity*)
  UN ID Number: UN 2984
  Proper Shipping Name: Hydrogen peroxide, aqueous solutions
  Hazard Class: 5.1
  Packing Group: III
  Label Statements: Limited Quantity Marking & Oxidizer (Division 5.1)

- **OTHER THAN CONSUMER PACKAGING:**
  UN ID Number: UN 2984
  Proper Shipping Name: Hydrogen peroxide, aqueous solutions
  Hazard Class: 5.1
  Packing Group: III
  Label Statements: Oxidizer (Division 5.1)

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

SECTION 15: REGULATORY INFORMATION

National Fire Protection Association Codes: Health: 2 Fire: 0 Reactivity: 1 Other: OX

Workplace Hazardous Materials Identification System: Class C; Oxidizing Material ; Class E; Corrosive Material

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

SECTION 16: OTHER INFORMATION

PREPARATION INFORMATION: This document replaces the version dated May 27, 2015 and all previous versions of safety data sheets related to this product.

Author: Ronald Weslosky (Corporate Regulatory Services)

SAFETY DATA SHEET

1. Identification

Product identifier **L'ORÉAL PARIS FERIA BONDING AFTER COLOR CONDITIONER**

Other means of identification

SDS number 00-12-0001304

Recommended use Personal care product used for cosmetic effect.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

US Address:
L'Oreal USA Products, Inc
133 Terminal Avenue
Clark, NJ 07066
USA

Canadian Address:
L'Oreal Canada
4895 rue Hickmore
Ville St-Laurent, H4T 1K5
Canada

Emergency Phone # :
1-800-535-5053 (International: 352-323-3500)
In Canada - 1-613-996-6666 (Canutec (*666 Cellular))

For further Information: 1-732-499-2741

Poison Control # : 412-390-3326

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Specific target organ toxicity, repeated exposure	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word Warning

Hazard statement Causes skin irritation. Causes serious eye irritation. May cause damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention Do not breathe mist/vapors. Wash thoroughly after handling. Wear eye protection/face protection. Wear protective gloves.

Response If on skin: Wash with plenty of water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention if you feel unwell. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Storage Store away from incompatible materials.

Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
GLYCERIN		56-81-5	5
BEHENTRIMONIUM CHLORIDE		68607-24-9	3.56
BIS-CETEARYL AMODIMETHICONE		1126942-72-0	1.8
CITRIC ACID		77-92-9	1.2
ISOPROPYL ALCOHOL		67-63-0	1.11
DICETYLDIMONIUM CHLORIDE		68391-05-9	1.05

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Do not breathe mist/vapors. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in tightly closed container. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

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

Components	Type	Value	Form
GLYCERIN (CAS 56-81-5)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
ISOPROPYL ALCOHOL (CAS 67-63-0)	PEL	980 mg/m3	
		400 ppm	

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
GLYCERIN (CAS 56-81-5)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value
ISOPROPYL ALCOHOL (CAS 67-63-0)	STEL	400 ppm
	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
ISOPROPYL ALCOHOL (CAS 67-63-0)	STEL	1225 mg/m3
		500 ppm
	TWA	980 mg/m3
		400 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
ISOPROPYL ALCOHOL (CAS 67-63-0)	40 mg/l	Acetone	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection	Applicable for industrial settings only. Chemical respirator with organic vapor cartridge and full facepiece.
Skin protection	
Hand protection	Applicable for industrial settings only. Wear appropriate chemical resistant gloves.
Other	Applicable for industrial settings only. Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	Applicable for industrial settings only. Chemical respirator with organic vapor cartridge and full facepiece.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Cream.
Color	White.
Odor	Characteristic.
Odor threshold	Not available.
pH	3 - 4
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 212 °F (> 100 °C)
Flash point	> 199.4 °F (> 93.0 °C) Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	>= 0.98 g/cm³
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity Not known.

Product	Species	Test Results
L'ORÉAL PARIS FERIA BONDING AFTER COLOR CONDITIONER		
Acute		
Dermal		
ATEmix		219800 mg/kg
Oral		
ATEmix		36390 mg/kg

Components	Species	Test Results
BEHENTRIMONIUM CHLORIDE (CAS 68607-24-9)		
Acute		
Oral		
LD50	Rat	3190 mg/kg OECD 401
BIS-CETEARYL AMODIMETHICONE (CAS 1126942-72-0)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg OECD 402
Oral		
LD50	Rat	> 2000 mg/kg OECD 423
CITRIC ACID (CAS 77-92-9)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg bw OECD 402
Oral		
LD50	Mouse	5400 mg/kg bw OECD 401
DICETYLDIMONIUM CHLORIDE (CAS 68391-05-9)		
Acute		
Oral		
LD50	Rat	960 mg/kg

Components	Species	Test Results
GLYCERIN (CAS 56-81-5)		
Acute		
Dermal		
LD50	Rabbit	> 18700 mg/kg bw
Inhalation		
LC50	Rat	> 570 mg/L air, 1 h
Oral		
LD50	Rat	27200 mg/kg bw
ISOPROPYL ALCOHOL (CAS 67-63-0)		
Acute		
Dermal		
LD50	Rabbit	12870 mg/kg 16.4 ml/kg bw OECD 402
Inhalation		
LC50	-	51.05 mg/l, 8 Hours
Vapor		
LC50	Rat	> 10000 ppm, 6 Hours OECD 403
Oral		
LD50	Rat	5840 mg/kg OECD 401

Skin corrosion/irritation Causes skin irritation.

Irritation Corrosion - Skin

DICETYLDIMONIUM CHLORIDE	OECD 404 Result: Corrosive Species: Rabbit
BIS-CETEARYL AMODIMETHICONE	OECD 404 Result: Irritating Species: Rabbit
CITRIC ACID	OECD 404 Result: Slightly Irritating Species: Rabbit
BEHENTRIMONIUM CHLORIDE	OECD 405 Result: Irritating Species: Rabbit
GLYCERIN	Result: Not Irritating Species: Rabbit
ISOPROPYL ALCOHOL	Result: Not Irritating Species: Rabbit

Serious eye damage/eye irritation Causes serious eye irritation.

Irritation Corrosion - Eye

BEHENTRIMONIUM CHLORIDE	OECD 404 Result: Corrosive Species: Rabbit
DICETYLDIMONIUM CHLORIDE	OECD 405 Result: Corrosive Species: Rabbit
BIS-CETEARYL AMODIMETHICONE	OECD 405 Result: Irritating Species: Rabbit
CITRIC ACID	OECD 405 Result: Irritating Species: Rabbit
ISOPROPYL ALCOHOL	OECD 405 Result: Severely Irritating Species: Rabbit
GLYCERIN	Result: Not Irritating Species: Rabbit

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Skin sensitization

GLYCERIN	167 mg/m3 air OECD 413, Inhalation Result: NOAEL Species: Rat Test Duration: 90 d
BEHENTRIMONIUM CHLORIDE	OECD 406 Result: Not Sensitizing Species: Guinea pig
BIS-CETEARYL AMODIMETHICONE	OECD 406 Result: Not Sensitizing Species: Guinea pig
DICETYLDIMONIUM CHLORIDE	OECD 406 Result: Not Sensitizing Species: Guinea pig
ISOPROPYL ALCOHOL	OECD 406 Result: Not Sensitizing Species: Guinea pig
CITRIC ACID	OECD 406 Result: Not Sensiziting Species: Guinea pig
GLYCERIN	Result: Not Sensitizing Species: Guinea pig

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Mutagenicity

CITRIC ACID	Result: In vitro and in vivo tests did not show mutagenic effects.
GLYCERIN	Result: In vitro and in vivo tests did not show mutagenic effects.
ISOPROPYL ALCOHOL	Result: In vitro and in vivo tests did not show mutagenic effects.
BEHENTRIMONIUM CHLORIDE	Result: In vitro tests did not show mutagenic effects
DICETYLDIMONIUM CHLORIDE	Result: In vitro tests did not show mutagenic effects

Carcinogenicity Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Developmental effects

CITRIC ACID	> 295 mg/kg bw/d, No effects on development Result: NOAEL Species: Rat
DICETYLDIMONIUM CHLORIDE	12 mg/kg bw/d OECD 414 Result: NOAEL Species: Rat
GLYCERIN	1310 mg/kg bw/d, No effects on development Result: NOAEL Species: Rat
ISOPROPYL ALCOHOL	400 mg/kg bw/d OECD 414, No effects on development Result: NOAEL Species: Rabbit

Reproductivity

ISOPROPYL ALCOHOL	1000 mg/kg bw/d OECD 416, No effects on fertility Result: NOAEL Species: Rat
GLYCERIN	2000 mg/kg bw/d, No effects on fertility Result: NOAEL Species: Rat

Reproductivity

CITRIC ACID	2500 mg/kg bw/d, No effects on fertility Result: NOAEL Species: Rat
DICETYLDIMONIUM CHLORIDE	56.3 mg/kg bw/d OECD 416 Result: NOAEL Species: Rat
BEHENTRIMONIUM CHLORIDE	75 mg/kg bw/d OECD 421 Result: NOAEL Species: Rat

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure.

BEHENTRIMONIUM CHLORIDE	10 mg/kg bw/d OECD 407, Oral Result: NOAEL Species: Rat Test Duration: 28 d
CITRIC ACID	4000 mg/kg bw/d, Oral Result: NOAEL Species: Rat Test Duration: 10 d
DICETYLDIMONIUM CHLORIDE	42 - 49 mg/kg bw/d OECD 408, Oral Result: NOAEL Species: Rat Test Duration: 93 d
ISOPROPYL ALCOHOL	5000 ppm OECD 413, Inhalation Result: NOAEL Species: Rat Test Duration: 90 d
GLYCERIN	8000 mg/kg bw/d, Oral Result: NOAEL Species: Rat Test Duration: 2 yr

Aspiration hazard Not an aspiration hazard.

Chronic effects May cause damage to organs through prolonged or repeated exposure.

Further information The reference to any animal testing for individual constituents mentioned in this document is based on public, third-party data.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
BEHENTRIMONIUM CHLORIDE (CAS 68607-24-9)			
Aquatic			
Acute			
Algae	EC50	Desmodesmus subspicatus	3.48 mg/l, 72 h OECD 201
Crustacea	EC50	Daphnia magna	1.39 mg/l, 48 h OECD 202
Fish	LC50	Danio rerio	0.5 - 1 mg/l, 96 h OECD 203
Other	EC50	Activated sludge of a predominantly domestic sewage	43 mg/l, 3 h OECD 209
Chronic			
Crustacea	NOEC	Daphnia magna	0.128 mg/l, 21 d OECD 211
Fish	NOEC	Danio rerio	0.24 mg/l, 9 d OECD 212
CITRIC ACID (CAS 77-92-9)			
Aquatic			
Algae	EC50	Microcystis aeruginosa	80 mg/l, 7 d
Crustacea	LC50	Daphnia magna	1535 mg/l, 24 h
Fish	LC50	Leuciscus idus	440 - 760 mg/l, 96 h OECD 203

Components		Species	Test Results
Other	EC50	Pseudomonas putida	4235 mg/l, 18 h OECD 209
DICETYLDIMONIUM CHLORIDE (CAS 68391-05-9)			
Aquatic			
Acute			
Algae	EC50	Pseudokirchneriella subcapitata	0.386 mg/l, 72 h OECD 201
Crustacea	EC50	Acartia tonsa	0.295 mg/l, 48 h ISO 14669
Fish	LC50	Danio rerio	0.26 mg/l, 96 h OECD 203
Other	EC50	Activated sludge of a predominantly domestic sewage	68 mg/l, 3 h OECD 209
Chronic			
Algae	NOEC	Pseudokirchneriella subcapitata	0.06 mg/l, 72 h OECD 201
Crustacea	NOEC	Daphnia magna	0.5 mg/l, 21 d OECD 202
Fish	NOEC	Pimephales promelas	0.23 mg/l, 35 d EPA-66013-75-00
GLYCERIN (CAS 56-81-5)			
Aquatic			
Acute			
Algae	EC0	Scenedesmus quadricauda	> 10000 mg/l, 192 h
Crustacea	EC50	Daphnia magna	1955 mg/l, 48 h
Fish	LC50	Oncorhynchus mykiss	54000 mg/l, 96 h
Other	NOEC	Pseudomonas putida	> 10000 mg/l, 16 h
ISOPROPYL ALCOHOL (CAS 67-63-0)			
Aquatic			
Acute			
Algae	EC50	Scenedesmus quadricauda	> 1000 mg/l, 72 h
Crustacea	EC50	Daphnia magna	9714 mg/l, 24 h OECD 202
Fish	LC50	Pimephales promelas	9640 mg/l, 96 h OECD 203
Other	TD	Pseudomonas putida	1050 mg/l, 16 DIN 38412, Pt. 8

Persistence and degradability

Biodegradability

Percent degradation (Aerobic biodegradation)

BEHENTRIMONIUM CHLORIDE	80 % OECD 301 Result: Readily Biodegradable Test Duration: 28 d
CITRIC ACID	97 % OECD 301 B Test Duration: 28 d
DICETYLDIMONIUM CHLORIDE	61 % OECD 301 B Result: Readily Biodegradable Test Duration: 28 d
GLYCERIN	OECD 301 Result: Readily Biodegradable
ISOPROPYL ALCOHOL	95 % OECD 301 E Result: Readily Biodegradable Test Duration: 21 d

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

CITRIC ACID	-1.64
DICETYLDIMONIUM CHLORIDE	4.7 - 4.9 OECD 123
GLYCERIN	-1.76
ISOPROPYL ALCOHOL	0.05

Bioaccumulation

ISOPROPYL ALCOHOL	Result: Bioaccumulation is unlikely.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

FINISHED GOODS

Not regulated as dangerous goods.

BULK

Not regulated as dangerous goods.

IATA

FINISHED GOODS

Not regulated as dangerous goods.

BULK

Not regulated as dangerous goods.

IMDG

FINISHED GOODS

Not regulated as dangerous goods.

BULK

Not regulated as dangerous goods.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Toxic Substances Control Act (TSCA)

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

ISOPROPYL ALCOHOL (CAS 67-63-0) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No (Exempt)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
ISOPROPYL ALCOHOL	67-63-0	1.11

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

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

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

GLYCERIN (CAS 56-81-5)	Other Flavoring Substances with OSHA PEL's
ISOPROPYL ALCOHOL (CAS 67-63-0)	Low priority

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

Issue date	09-12-2022
Version #	01
NFPA ratings	Health: 2 Flammability: 1 Instability: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

L'ORÉAL USA

SAFETY DATA SHEET

SDS # 15-182

ISSUANCE DATE: May 28, 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: Flammable Hair Colors containing Trideceth-2-Carboxamide MEA and Ammonium Hydroxide

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	• 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	• Wear eye protection/face protection
	Skin Irritation Category 2	Causes skin irritation	• 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	• Avoid breathing mist/vapors/spray. • Contaminated work clothing must not be allowed out of the workplace.
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. 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
Trideceth-2-Carboxamide MEA	107628-04-6	≤ 10.0%
Ethanol	64-17-5	≤ 5.0%
Ammonium Hydroxide	1336-21-6	≤ 5.0%
Polyglyceryl-2 Oleyl Ether	9022-76-8	≤ 4.0%
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 eye. **If eye irritation persists:** Get medical advice/attention.

IF ON SKIN: Wash with plenty of water. See product packaging/insert for specific treatment/ additional information. **If skin irritation or rash occurs:** get medical advice/attention. Take off contaminated clothing and wash it before reuse.

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 severe eye damage. Causes skin irritation. May cause an allergic skin reaction. 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 and/or foam for extinction. Water spray may be used to soak other materials surrounding the product, to prevent the spread of the fire. 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: Treat as a flammable liquid. Follow National Fire Protection Association Guidelines or local guidelines appropriate for emergency response.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Observe all appropriate precautions for handling flammable 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 flammable 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 flammable 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 flammable 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 flammable 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
Ethanol (64-17-5)	OSHA PEL	1,000	1,900	--	--
	ACGIH TLV	--	--	1,000	1,880
	NIOSH REL	1,000	1,900	--	--

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	**--**	**--**	**--**	**--**

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 corrosive 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: Not Available

MELTING/FREEZING POINT: **F:** N/A **C:** N/A

BOILING POINT: **F:** Not Available **C:** Not Available

FLASH POINT: **F:** <140 **C:** < 60 **METHOD USED:** Closed cup

EVAPORATION RATE: > 1 **(Butyl acetate = 1)**

FLAMMABILITY: Not Applicable to Liquids

FLAMMABLE LIMITS IN AIR:	ETHANOL: 19% UEL; 3.3% LEL AMMONIA: 28% UEL; 15% LEL ETHANOLAMINE: 23.5% UEL; 3.0% LEL
VAPOR PRESSURE (mmHg):	@ 70F: 44 (as ethanol) @ 21 C: 44 (as ethanol)
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 severe skin burns
SERIOUS EYE DAMAGE/IRRITATION: Causes serious eye damage
RESPIRATORY/SKIN SENSITIZATION: None expected
INGESTION: Harmful if swallowed.
INHALATION: Over-exposure may cause respiratory irritation.

ROUTES OF EXPOSURE: Eyes, skin

SYMPTOMS: Causes severe skin burns and serious eye damage. May cause allergic skin reaction. 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
Trideceth-2-Carboxamide MEA	Oral LD_{50}	Rat	>5000 mg/kg bw
Trideceth-2-Carboxamide MEA	Dermal LD_{50}	Rat	2000 mg/kg
Ethanol	Oral LD_{50}	Rat	> 6,200 mg/kg bw
Ethanol	Dermal LD_{Lo}	Rabbit	> 20,000 mg/kg bw
Ethanol	LC_{50} (4 hr)	Rat	> 8,000 mg/L
Ammonium Hydroxide	Oral LD_{50}	Rat (OECD 401)	350 mg/kg
Ammonium Hydroxide	Inh. LC_{50} (1h)	Rat	11,590 mg/L air
Polyglyceryl-2 Oleyl Ether	Oral LD_{50}	Rat (OECD 401)	>2000 mg/kg
Polyglyceryl-2 Oleyl Ether	Dermal LD_{50}	Rat (OECD 402)	>2000 mg/kg
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:

Ethyl Alcohol: Not Irritating (Rabbit, OECD 404)
Ammonium Hydroxide Irritating (5-10%); Corrosive (≥ 10%)
Polyglyceryl-2 Oleyl Ether Irritating (OECD 404)
Resorcinol Not Irritating (Rabbit, OECD 404)
m-Aminophenol Not Irritating (Rabbit, OECD 404)
p-Phenylenediamine Not Irritating (Rabbit)
p-Aminophenol Not Irritating (Rabbit, OECD 404)
Sodium Metabisulfite Not Irritating (Rabbit, OECD 404)

Serious Eye Damage/Irritation:

Ethyl Alcohol: 25% - Not Irritating / 50% - Mildly Irritating / 100% - Irritating (Rabbit, OECD 405)
Ammonium Hydroxide Corrosive (Rabbit)
Polyglyceryl-2 Oleyl Ether Corrosive (OECD 405)
Resorcinol Not Irritating (Rabbit, OECD 405)
m-Aminophenol Not Irritating (Rabbit, OECD 405)
p-Phenylenediamine Irritating (Rabbit, OECD 405)
p-Aminophenol Not Irritating (Rabbit, OECD 405)
Sodium Metabisulfite Irritating (Rabbit, OECD 405)

Respiratory Irritation:

Ethyl Alcohol: 27,314 ppm (Mouse) Highly Irritating
Ammonium Hydroxide Highly Irritating (>50 ppm) (Human)

Skin Sensitization:

Ethyl Alcohol: Not sensitizing (Guinea Pig)
Ammonium Hydroxide Not Sensitizing (Guinea Pig)
Resorcinol Sensitizing (Mouse) (OECD 429)
m-Aminophenol Sensitizing (Mouse) (OECD 429)

p-Phenylenediamine	Sensitizing *(*Mouse) (OECD 429)
p-Aminophenol	Sensitizing (Guinea Pig) (OECD 406)
Sodium Metabisulfite	Sensitizing *(*Mouse) (OECD 429)

CHRONIC HEALTH HAZARDS:

REPEAT DOSE TOXICITY:

NOAEL (Ethyl Alcohol, oral): >2% (2400 mg/kg); Rat
LOAEL (Ethyl Alcohol, oral): 3% (3600 mg/kg); Rat
NOAEL (Polyglyceryl-2 Oleyl Ether, oral): 80 mg/kg/day (Rat, OECD 408)
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 (p-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
Ethyl Alcohol (64-17-5)	--	TLV-A3	--	--
Resorcinol (108-46-3)	**--**	TLV-A4	**--**	IARC-3
p-Phenylenediamine (106-50-3)	**--**	TLV-A4	**--**	IARC-3
Sodium Metabisulfite (7681-57-4)	**--**	TLV-A4	**--**	**--**

Notes:

ACGIH TLV-A3 – Confirmed Animal Carcinogen with Unknown Relevance to Humans
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:

Ethyl Alcohol:	Classified as mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May affect genetic material (mutagenic).
Ammonium Hydroxide	A variety of *in vitro* test 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)
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:

Ethyl Alcohol:	Effects on the female reproductive system can include menstrual problems, altered sexual behavior, infertility, altered puberty onset, altered length of pregnancy, lactation problems, altered menopause onset and pregnancy outcome. Effects on the male reproductive system can include altered sexual behavior, altered fertility and problems with sperm shape or count.
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:

Ethyl Alcohol:	Ethanol has been connected to adverse reproductive effects and birth defects (teratogenic), based on moderate to heavy consumption. Human: passes through the placenta, excreted in maternal milk. Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects which together constitute fetal alcohol syndrome. These include

	mental and physical retardation, disturbances of learning, motor and language deficiencies, behavioral disorders and small size head.
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
Ethyl Alcohol	LC_{50}	12. 9 - 15.3g/L	Pimephales promelas	96 h
Ammonium Hydroxide	LC_{50}	1.73 mg/L	Lepomis cyanellus	96 h
Polyglyceryl-2 Oleyl Ether	LC_{50}	>0.927 mg/L (OECD 203)	Oncorhynchus mykiss	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
Ethyl Alcohol	EC_{50}	5,012 mg/L	Ceriodaphnia Dubia	48 h
Ammonium Hydroxide	EC_{50}	101 mg/L (ASTM E729-80)	Daphnia Magna	48 h
Polyglyceryl-2 Oleyl Ether	EC_{50}	3.8 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
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
Ethyl Alcohol	EC_{50}	675 mg/L	Chlorella Vulgaris	4 d
Polyglyceryl-2 Oleyl Ether	EC_{50}	0.736 mg/L (OECD 201)	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
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
Ethyl Alcohol	EC_{50}	32.1 g/L	Photobacterium phoshoreum	15 min
Polyglyceryl-2 Oleyl Ether	EC_{50} (OECD 209)	~1,000 mg/L	Activated Sludge	Not specified
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:

Ethyl Alcohol: Readily Biodegradable – OECD 301 B – 97% (28d)
Ammonium Hydroxide Expected to be Readily Biodegradable (Converts to nitrates)
Polyglyceryl-2 Oleyl Ether Readily Biodegradable – OECD 301 B – 84% (28 d)
Resorcinol Readily Biodegradable – OECD 301 C
m-Aminophenol Readily Biodegradable – Half life: 15 days
p-Phenylenediamine Readily biodegradable (OECD 301 D)

BIOACCUMULATIVE POTENTIAL:

Ethanol: $logBCF_{(calculated)}$ = 0.5 (BCFWIN v2.15) – Not likely to bioaccumulate
Ammonium Hydroxide Not Applicable
Polyglyceryl-2 Oleyl Ether low Pow: 5.55 (calculated value)
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, plastic/lined drums for solids. These containers should meet the packaging specifications required for DOT compliance. Packaging containers must not include incompatible materials.

WASTE DISPOSAL METHOD: As manufactured, this product exhibits the ignitable (D001) RCRA characteristic 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: D001

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 (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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