AgroFresh Inc.
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Real Clean

POSTHARVEST

SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: Real Clean
Product Code: 10414
Product Use: Fruit and Vegetable Washing Compound
Product Restrictions: For Agriculture Use Only
Manufacturer: Pace International, LLC
Address: 5661 Branch Road, Wapato, WA 98951
Phone Number: 800-936-6750 (Monday-Friday, 7:00 a.m. – 4:00 p.m.)
Medical Emergency Phone Number: 888-271-4649 (PROPHARMA/PROSAR)
Transportation Emergency Phone Number: 800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

GHS Classification in accordance with 29 CFR 1910 (2012 OSHA Hazard Communication Standard)
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification:
Physical, CORROSIVE Category 1
Skin irritation, Category 1
Eye irritation, Category 1

Hazard Symbols:

Signal Word:
DANGER

Hazard Statements:
DANGER
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

Precautionary Statements:
Prevention Statements:
P234 Keep only in original container.
P260 Do not breathe mists or vapor.
P264 Wash hands thoroughly after handling.
P280 Wear impermeable clothing, safety goggles or face shield and chemical resistant gloves.
Response Statements:
P390 Absorb spillage to prevent material damage.
P301/330/331 IF SWALLOWED: Rinse mouth. Do not induce vomiting.
P312 Call a Poison Center or doctor if you feel unwell.
P303/361/353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363 Wash contaminated clothing before reuse.
P304/340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310 Immediately call a POISON CENTER/doctor for medical advice.
P321 Specific treatments see Section 4 First Aid Measures.
P305/351/338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor for medical advice.
Storage Statements:
P406 Store in corrosive resistant container with a resistant inner liner.
P405 Store locked up.
Disposal Statements:
P501 Dispose of contents/container should be made in accordance with applicable regional, national and local laws and regulations.

Hazard(s) not otherwise classified (HNOC) None Known
Supplemental information Not applicable.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS #	Concentration (w/w %)
Sodium Hydroxide	1310-73-2	6.0 %
Sodium lauryl ether sulfate	9004-82-4	3.0 %
Sulfonated sodium salts, propylene derivatives	119345-04-9	1.8 %
Other ingredients*	Balance	89.2 %

*Other Ingredients not identified are trade secrets and non-hazardous.

4. FIRST AID MEASURES

General Advice:	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Have the product container, label or Safety Data Sheet with you when calling a poison control center or physician, or going for treatment. You may also contact PROPHARMA (PROSAR) 1-888-271-4649 for emergency medical treatment information.
If on Skin (or hair):	Take off immediately all contaminated clothing. Wash skin with plenty of soap and water. Wash contaminated clothing before reuse.
If in Eyes:	Hold eye open and rinse cautiously with water for 15 – 20 minutes. Remove contact lenses after the first 5 minutes if present and easy to do, then continue rinsing eye. Immediately call a POISON CENTER/doctor for medical advice.
If Swallowed:	Rinse mouth. Do not induce vomiting. Call a Poison Center or doctor if you feel unwell.
If Inhaled:	Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor for medical advice.
Most important Symptoms / effects, acute and Delayed:	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
Indication of any immediate medical attention and special treatment needed:	Treat patient symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:	Not flammable. Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.
Unsuitable Extinguishing Media:	Not available.
Special Hazards Arising from the Chemical:	During fire, gases hazardous to health may be formed.
Special Protective Equipment / Precautions for Firefighters:	Firefighters should wear full protective clothing including self-contained breathing apparatus.
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.
Hazardous combustion products	May include and are not limited to: Oxides of carbon. Oxides of sulfur.

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 or vapor. 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:	Stop leak if you can do so without risk. This product is miscible in water. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Never return spills to original containers for re-use. Clean surface thoroughly to remove residual contamination. Following product recovery, flush area with water. Prevent entry into waterways, sewer, basements or confined areas. For waste disposal, see section 13 of the SDS.
Environmental precautions:	Do not discharge into lakes, streams, ponds or public waters.

7. HANDLING & STORAGE

Precautions for	Use good industrial hygiene practices in handling this material.

safe handling:	DO NOT get in eyes, on skin or clothing. Do not breathe mist or vapor. Keep container tightly closed. Wear appropriate personal protective equipment. Wash thoroughly after handling. When using do not eat, drink, or smoke.
Conditions for safe storage, including any incompatibilities:	Store locked up. Store in a cool, dry, well-ventilated place not below 45°F (7°C) Store in a corrosion resistant container with a resistant inner liner. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m3

US ACGIH Threshold Limit Values: Skin designation

1,4-Dioxane (CAS 123-91-1) Can be absorbed through the skin.

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

1,4-Dioxane (CAS 123-91-1) Can be absorbed through the skin.

Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	See above
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) 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.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear chemical goggles or face shield. Eye fountain and washing facilities should be available.
Skin protection	
Hand protection	Nitrile, neoprene, and vinyl (PVC) gloves or other impervious gloves.
Other	If there is a potential for splashing or skin contact, wear impervious apron or clothing.
Respiratory protection	If product is aerosolized or where exposure guideline levels may be exceeded, use an approved NIOSH respirator, acid gas filter combination. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134)
Thermal hazards	Not applicable.
General hygiene considerations	Use good industrial hygiene practices in handling this material. When using do not eat, drink, or smoke. Wash thoroughly after handling.

9. PHYSICAL & CHEMICAL PROPERTIES

Physical state:	Liquid	**Upper/Lower flammability limits:**	Not available
Appearance / Color:	Clear light to dark	**Vapor pressure:**	Not available

	amber		
Odor:	Mild	**Vapor density: (air =1)**	Not available
Odor threshold:	Not available	**Specific Gravity: (H_2O = 1)**	1.1375
pH:	13.51	**Solubility:**	Soluble in water
Melting/Freezing point:	Not available	**Partition coefficient (n-octanol-water):**	Not available
Initial boiling point and boiling range:	212°F (100°C)	**Auto-ignition temperature:**	Not available
Pour point:	Not available	**Decomposition temperature:**	Not available
Flash point:	> 200°F (93°C)	**Viscosity:**	Not available
Evaporation rate:	Not available	**Explosive properties:**	Not explosive
Flammability (solid, gas):	Not applicable	**Oxidizing Properties:**	Not oxidizing

10. STABILITY & REACTIVITY

Reactivity hazards:	May be corrosive to metals. This product may react with strong oxidizing agents.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Chemical stability:	Stable under recommended storage conditions.
Conditions to avoid:	Do not mix with other chemicals.
Incompatible materials:	Strong acids. Strong oxidizing agents. Metals.
Hazardous decomposition products:	May include and are not limited to: Oxides of carbon. Oxides of sulfur.

11. TOXICOLOGICAL INFORMATION

Routes of exposure Eye, Skin contact, Inhalation, Ingestion.

Information on likely routes of exposure

Ingestion	Causes digestive tract burns. May cause stomach distress, nausea or vomiting.
Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin corrosion / irritation:	May cause chemical burns. Harmful contact may not cause immediate pain.
Eye damage / irritation:	Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics Contact with this material may cause burns to the skin, eyes and mucous membranes.

Information on toxicological effects

Acute toxicity

Components	**Species**	**Test Results**
Sodium hydroxide (CAS 1310-73-2)		
Acute		
Dermal		
LD50	Not available	
Inhalation		
LC50	Not available	
Oral		
LD50	Not available	
Sodium lauryl ether sulfate (CAS 9004-82-4)		
Acute		
Dermal		
LD50	Not available	
Inhalation		
LC50	Not available	
Oral	Rat	
LD50		1600 mg/kg
Sulfonated sodium salts, propylene derivatives (CAS 119345-04-9)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours, ECHA
	Rat	> 2000 mg/kg, 24 Hours, ECHA
Inhalation		
LC50	Not available	

Oral		
LD50	Rat	> 5000 mg/kg, ECHA > 2000 mg/kg, ECHA

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/eye Irritation: Causes serious eye damage.

Respiratory sensitization: Not a respiratory sensitizer.

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

Germ cell mutagenicity: Non-hazardous by WHMIS/OSHA criteria.

Carcinogenicity: See below.

ACGIH Carcinogens

1,4-Dioxane (CAS 123-91-1)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Ethylene Oxide (CAS 75-21-8)	A2 Suspected human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

1,4-Dioxane (CAS 123-91-1)	Volume 11, Supplement 7, Volume 71 - 2B Possibly carcinogenic to humans.
Ethanol (CAS 64-17-5)	Volume 44, Volume 96, Volume 100E, Volume 96, Volume 100E
Ethylene Oxide (CAS 75-21-8)	Volume 97, Volume 100F 1 Carcinogenic to humans.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

1,4-Dioxane (CAS 123-91-1)

Ethanol (CAS 64-17-5)

Ethylene Oxide (CAS 75-21-8)

US NTP Report on Carcinogens: Anticipated carcinogen

1,4-Dioxane (CAS 123-91-1)	Reasonably Anticipated to be a Human Carcinogen.

US NTP Report on Carcinogens: Known carcinogen

Ethylene Oxide (CAS 75-21-8)	Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Ethylene Oxide (CAS 75-21-8)	Cancer

Reproductive toxicity: This product is not expected to cause reproductive or developmental effects. Non-hazardous by WHMIS/OSHA criteria.

Teratogenicity: Non-hazardous by WHMIS/OSHA criteria.

Specific target organ toxicity - single exposure: Not classified.

Specific target organ toxicity - repeated exposure: Not classified.

Aspiration hazard: Not classified.

Chronic effects: Prolonged inhalation may be harmful.

12. ECOLOGICAL INFORMATION

Ecotoxicity See below

Ecotoxicological data Components		**Species**	**Test Results**
Sodium hydroxide (CAS 1310-73-2)			
Aquatic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	34.59 - 47.13 mg/L, 48 hours
Fish	LC50	Western mosquitofish (Gambusia affinis)	125 mg/L, 96 hours
Sodium lauryl ether sulfate (CAS 9004-82-4)			
Aquatic			
Crustacea	EC50	Water flea (Ceriodaphnia dubia)	2.43 - 4.01 mg/L, 48 hours

Persistence/ degradability: No data is available on the degradability of this product.

Bioaccumulative potential

Mobility in soil: No data available.

Mobility in general: Not 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 methods:	Recover or recycle if possible. Do not discharge into sewers, lakes, streams, or other bodies of water. Disposal should be made in accordance with applicable regional, national and local laws and regulations. Consult appropriate regulatory officials for information on disposal, keeping in mind that local regulations may be more stringent than regional or national requirements.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
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	IMDG	IATA
UN number:	UN1824	Not applicable	Not applicable
Proper shipping name:	Corrosive liquid, basic, inorganic, n.o.s. (sodium hydroxide solution)	Not regulated	Not regulated
Hazard class(es):	8	Not applicable	Not applicable
Packing group:	II	Not applicable	Not applicable
Marine Pollutant:	Not applicable		
Special precautions:	B2, IB2, N34, T7, TP2		
Packaging exceptions:	154		
Packaging Non Bulk:	202		
Packaging Bulk:	242		

15. REGULATORY INFORMATION

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

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

1,4-Dioxane (CAS 123-91-1)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed

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

Ethylene Oxide (CAS 75-21-8)	Listed

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

1,4-Dioxane (CAS 123-91-1)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
Sodium hydroxide (CAS 1310-73-2)	Listed

US EPCRA Section 304 Extremely Haz. Subs. & CERCLA Haz. Subs.: Section 304 EHS reportable quantity

Ethylene Oxide (CAS 75-21-8)	10 LBS

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Ethylene Oxide (CAS 75-21-8)	Cancer
	Reproductive Toxicity
	Mutagenicity
	Central Nervous System
	Skin Sensitization
	Eye irritation
	Respiratory tract irritation
	Acute toxicity
	Flammability

Superfund Amendments and Reauthorization Act of 1986 (SARA)	Hazard Categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance		No
SARA 311/312 Hazardous chemical		No
SARA 313 (TRI reporting)		Not regulated.

US STATE REGULATIONS

US - California Hazardous Substances (Director's):	
1,4-Dioxane (CAS 123-91-1)	Listed
Ethanol (CAS 64-17-5)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
Sodium hydroxide (CAS 1310-73-2)	Listed
US - Illinois Chemical Safety Act: Listed substance	
1,4-Dioxane (CAS 123-91-1)	Listed
Ethanol (CAS 64-17-5)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
Sodium hydroxide (CAS 1310-73-2)	Listed
US - Louisiana Spill Reporting: Listed substance	
1,4-Dioxane (CAS 123-91-1)	Listed
Ethanol (CAS 64-17-5)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
Sodium hydroxide (CAS 1310-73-2)	Listed
US - Minnesota Haz Subs: Listed substance	
1,4-Dioxane (CAS 123-91-1)	Listed
Ethanol (CAS 64-17-5)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
Sodium hydroxide (CAS 1310-73-2)	Listed
US - New Jersey RTK - Substances: Listed substance	
1,4-Dioxane (CAS 123-91-1)	Listed
Ethanol (CAS 64-17-5)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
Sodium hydroxide (CAS 1310-73-2)	Listed
US – North Carolina Toxic Air Pollutants: Listed substance	
1,4-Dioxane (CAS 123-91-1)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
US – Pennsylvania RTK Hazardous Substance: Special Hazard	
1,4-Dioxane (CAS 123-91-1)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
US - Texas Effects Screening Levels: Listed substance	
1,4-Dioxane (CAS 123-91-1)	Listed
Alcohols, C12-15, ethoxylated (CAS 68131-39-5)	
Ethanol (CAS 64-17-5)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
Sodium hydroxide (CAS 1310-73-2)	Listed
Sodium lauryl ether sulfate (CAS 9004-82-4)	Listed
Sulfonated sodium salts, propylene deriatives (CAS 119345-04-9)	Listed

US – Washington Chemical of High Concern to Children: Listed Substance

1,4-Dioxane (CAS 123-91-1)	Listed

US. Massachusetts RTK - Substance List

1,4-Dioxane (CAS 123-91-1)	Listed
Ethanol (CAS 64-17-5)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
Sodium hydroxide (CAS 1310-73-2)	Listed

US. New Jersey Worker and Community Right-to-Know Act

1,4-Dioxane (CAS 123-91-1)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed

US. Pennsylvania Worker and Community Right-to-Know Law

1,4-Dioxane (CAS 123-91-1)	Listed
Ethanol (CAS 64-17-5)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
Sodium hydroxide (CAS 1310-73-2)	Listed

US. Rhode Island RTK

1,4-Dioxane (CAS 123-91-1)	Listed
Ethylene Oxide (CAS 75-21-8)	Listed
Sodium hydroxide (CAS 1310-73-2)	Listed

US. California Proposition 65

WARNING: This product can expose you to chemicals including 1,4-dioxane, which is known to the State of California to cause cancer, and Ethylene Oxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

1,4-Dioxane (CAS 123-91-1)	Listed: January 1, 1988
Ethanol (CAS 64-17-5)	Listed: April 29, 2011
	Listed: July 1, 1988
Ethylene Oxide (CAS 75-21-8)	Listed: July 1, 1987

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Ethanol (CAS 64-17-5)	Listed: October 1, 1987
Ethylene Oxide (CAS 75-21-8)	Listed: August 7, 2009

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Ethylene Oxide (CAS 75-21-8)	Listed: February 27, 1987

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Ethylene Oxide (CAS 75-21-8)	Listed: August 7, 2009

Inventory status

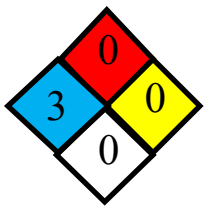
Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. OTHER INFORMATION

HMIS Ratings: Health – 3 | Flammability – 0 | Reactivity – 0

NFPA Ratings:



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This Safety Data Sheet (SDS) may provide more information than the product label but does not replace or modify the product labeling (attached to and accompanying the product container). The product SDS and the product label both provide consistent and important health, safety, and environmental information as required by the Occupational Health and Safety Act (29 CFR 1910.1200, "Hazcom"). This requirement covers employers, employees, emergency responders, users and others handling the product. All necessary hazard classification and appropriate precautionary, use, storage, and disposal information is set forth on the labeling and the SDS.

SDS preparation date:	September 26, 2025	**Replaces MSDS dated:**	June 19, 2017
Changes since last revision:	Rebranding	**Version:**	4