Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Date of issue: 02/20/2018

SECTION 1: Identification	
1.1. Identification	
Product form	: Mixture
Product name	: BR-FA, FOR ALL PRE SOAK
Product code	: BR-FA5, BR-FA55
1.2. Recommended use and restrictions of	on use
No additional information available	
1.3. Supplier	
BROTHERS RESEARCH CORPORATION	
2245 Air Park Drive	
Burlington, NC 27215 T 800-638-7245	
1.4. Emergency telephone number Emergency number	: 800-424-9300
	. 000 424 0000
SECTION 2: Hazard(s) identification	
2.1. Classification of the substance or mi	xture
GHS-US classification	
Skin corrosion/irritation H314 Category 1A	Causes severe skin burns and eye damage
Skin sensitization Category H317	May cause an allergic skin reaction
1 Full text of H statements : see section 16	
2.2. GHS Label elements, including preca	utionary statements
GHS-US labeling	
Hazard pictograms (GHS-US)	
Signal word (GHS-US)	: Danger
Hazard statements (GHS-US)	: H314 - Causes severe skin burns and eye damage H317 - May cause an allergic skin reaction
Precautionary statements (GHS-US)	 P260 - Do not breathe dust, fume, gas, mist, spray, vapors P261 - Avoid breathing dust, fume, gas, mist, spray, vapors P264 - Wash face, hands, clothing, hands, forearms and face thoroughly after handling P272 - Contaminated work clothing must not be allowed out of the workplace P280 - Wear eye protection, face protection, face shield, protective clothing, protective gloves P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting P302+P352 - If on skin: Wash with plenty of hands, forearms and face, clothing P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P310 - Immediately call a doctor, a POISON CENTER P321 - Specific treatment (see hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation on this label) P333+P313 - If skin irritation or rash occurs: Get medical advice/attention P363 - Wash contaminated clothing before reuse P405 - Store locked up P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

No additional information available

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2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2	Mixtures	5

Name	Product identifier	%	GHS-US classification
dodecylbenzenesulphonic acid	(CAS No) 27176-87-0	5 - 10	Acute Tox. 4 (Oral), H302 Skin Corr. 1A, H314
CITRIC ACID	(CAS No) 77-92-9	1 - 5	Not classified
(+)-limonene	(CAS No) 5989-27-5	1 - 2	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures	
4.1. Description of first aid measures	
First-aid measures general	 Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	Remove person to fresh air and keep comfortable for breathing. Allow victim to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see on this label). Wash skin with plenty of water.
First-aid measures after eye contact	Immediately call a poison center or doctor/physician. Rinse eyes with water as a precaution.
First-aid measures after ingestion	 Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.
4.2. Most important symptoms and effects	(acute and delayed)
Potential Adverse human health effects and symptoms	Based on available data, the classification criteria are not met.
Symptoms/injuries after skin contact :	Causes skin irritation.
Symptoms/injuries after eye contact	Causes serious eye damage.
4.3. Immediate medical attention and spec	ial treatment, if necessary
Treat symptomatically.	
SECTION 5: Fire-fighting measures	
5.1. Suitable (and unsuitable) extinguishin	ig media
Suitable extinguishing media	Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	Do not use a heavy water stream.
5.2. Specific hazards arising from the cher	mical
No additional information available	
5.3. Special protective equipment and pre-	cautions for fire-fighters
Firefighting instructions :	 Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
SECTION 6: Accidental release measu	ires
6.1. Personal precautions, protective equi	pment and emergency procedures
6.1.1. For non-emergency personnel	
Emergency procedures	Evacuate unnecessary personnel.

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Protective equipment is in on a temp protection. For further information refer to section 8: "Exposure controllable second is "Exposure control and personal protection. For further information is a cathor of the work station were severe in a cathor cate second is a cathor of the work station were severe in a cathor cate second is a cathor of the work station were personal protective equipment. Wash hand is a cathor in sposad is all handing the protection in process are to greent formation of exposure controls and personal protection. For further information in personal protective equipment. Wash hand is and other second areas with mild second and work before a tening of which ger arrowing and who were personal protective equipment. Wash hand is a cathor is good entillation of the work station. Wear personal protective equipment. Wash hand is a cathor is good and atter barding the protection in process are to greent formation of export wash hand and there appeared areas with mild second and who were used in the cate and there appeared areas with mild second and who were used in the cate and there appeared areas with mild second and who were used in the cate and there appeared there and in the cate and there appeared there and there appeared	6.1.2. For emergency responders	
2.2. Environmental precautions Avaid release to the environment, Prevent entry to severs and public waters. Notify authorities if liquid enters severs or public waters. 2.3. Methods and material for containment and cleaning up Methods for cleaning up : Take up liquid spill into absorber material. Stak up spills with iner solvers. Solvers way from other materials. Cher information : Dispose of materials or solid residues at an authorized site. 6.4. Reference to other sections See leading 3. Exposure controls and personal protection. En further information refer to section 13. SECTION 7: Handling and storage Ensure good ventilation of the work station. Wear personal protective equipment. Wash hands and other responde drees with mild scap and water before eating, drinking or smoking and when heaving work. Twooding good water before eating, drinking or smoking at an other section 13. Section 7: Conditions for sale handling : Ensure good ventilation of the work station. Wear personal protective equipment. Wash hands and other responde drees with mild scap and water before eating, drinking or smoking and when alse brack with hands after handling. Drin et al. (nih is result before eating, drinking or smoking and when alse brack with hands after handling. Drin et al. (nih is result before eating, drinking or smoking and when alse brack with all the original container in a coli, well ventilated place away from : Keep container closed when not in use. Store in a well-ventilated place. Keep cool. Incompatible materials Storage conditions : Storage scriftion. Direct sunlight. SECTION 6: Exposure controls	Protective equipment	proper protection. For further information refer to section 8: "Exposure controls/personal protection".
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8.3. Methods and material for containment and cleaning up Methods for cleaning up : Take up liquid split into absorbert material. Soak up splits with inert solids, such as clay or distanceous serial as soon as prossible. Collect splitage. Store away from other materials. Other information : Dispose of materials or solid residues at an authorized site. 6.4. Reference to ther sections See Heading 8. Exposure controls and personal protection. For further information refer to section 13. SECTOD 7: Handling and storage 7.1. Precautions for safe handling Precautions for safe handling Precautions for safe storage, including any incompatibilities Storage conditions : Exposure good ventilation of the work station. Wear personal protective equipment. Wash hands and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Hygiene measures : Weahthrocough after handling the product. 7.2. Conditions for safe storage, including any incompatibilities Storage conditions Storage conditions : Keep only in the original container in a woll-ventilated place. Keep cool. Incompatible products : Storage scole gradies Korage locable (dodcytheresonal protection gradies. 8.1. Controls/personal protection : Sources of gration. Direct sunight. Storage controls : Ensure good ventilation of th	•	
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Wear appropriate mask	Respiratory protection:	
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Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical	properties
9.1. Information on basic physical and	
Physical state	: Liquid
Color	: Orange
Odor	: characteristic
Odor threshold	: No data available
рН	: 2
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 212 °F
Flash point	: > 200 °F
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: 1 H20>1
Relative density of saturated gas/air mixture	: 1
Solubility Log Pow	: No data available : No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	$\therefore = 95 \text{ cP}$
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
9.2. Other information	
No additional information available	
SECTION 10: Stability and reactivity	1
10.1. Reactivity	
No additional information available	
10.2. Chemical stability	
Not established.	
10.3. Possibility of hazardous reactions	
Not established.	
10.4. Conditions to avoid	
Direct sunlight. Extremely high or low temperatu	ires.
10.5. Incompatible materials	
Strong acids. Strong bases.	
10.6. Hazardous decomposition product	S
fume. Carbon monoxide. Carbon dioxide.	
SECTION 11: Toxicological informa	tion
11.1. Information on toxicological effects	
Acute toxicity	: Not classified

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dodecylbenzenesulphonic acid (27176-87-0)	
LD50 oral rat	650 mg/kg (Rat; Literature study)
ATE US (oral)	650 mg/kg body weight
(+)-limonene (5989-27-5)	
LD50 oral rat	4400 mg/kg body weight (Rat; OECD 423: Acute Oral Toxicity – Acute Toxic Class Method; Literature study; > 2000 mg/kg bodyweight; Rat; Read-across)
LD50 dermal rabbit	> 5000 mg/kg body weight (Rabbit; Weight of evidence; Equivalent or similar to OECD 402)
ATE US (oral)	4400 mg/kg body weight
Skin corrosion/irritation	: Causes severe skin burns and eye damage.
	pH: 2
Serious eye damage/irritation	: Not classified
	pH: 2
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
(+)-limonene (5989-27-5)	
IARC group	3 - Not classifiable
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after skin contact	: Causes skin irritation.

SECTION 12: Ecological information	
12.1. Toxicity	
Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

dodecylbenzenesulphonic acid (27176-87-	-0)
Threshold limit algae 2	127.9 mg/l (ErC50; Other; 72 h; Scenedesmus subspicatus; Static system)
(+)-limonene (5989-27-5)	
LC50 fish 1	720 μg/l (96 h; Pimephales promelas; Lethal)
EC50 Daphnia 1	0.36 mg/l (48 h; Daphnia magna; GLP)
LC50 fish 2	702 μg/l (96 h; Pimephales promelas)
Threshold limit algae 1	150 mg/l (72 h; Desmodesmus subspicatus; GLP)
Threshold limit algae 2	2.62 mg/l (72 h; Desmodesmus subspicatus)

12.2. Persistence and degradability

BR-FA, FOR ALL PRE SOAK	
Persistence and degradability	Not established.
dodecylbenzenesulphonic acid (27176-87-0)	
Persistence and degradability	Readily biodegradable in water. Low potential for adsorption in soil.
Chemical oxygen demand (COD)	2.41 g O₂/g substance
(+)-limonene (5989-27-5)	
Persistence and degradability	Readily biodegradable in water. Forming sediments in water. Adsorbs into the soil.
ThOD	3.29 g O₂/g substance

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12.3. Bioaccumulative potential	
BR-FA, FOR ALL PRE SOAK	
Bioaccumulative potential	Not established.
dodecylbenzenesulphonic acid (27176-87-0)	
Log Pow	1.96
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
(+)-limonene (5989-27-5)	
BCF fish 1	864.8 - 1022 (Pisces; Fresh weight)
Log Pow	4.38 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 37 °C)
Bioaccumulative potential	Potential for bioaccumulation ($4 \ge Log \text{ Kow} \le 5$).
12.4. Mobility in soil	
dodecylbenzenesulphonic acid (27176-87-0)	
Surface tension	35 N/m (25 °C; 800 mg/l)
12.5. Other adverse effects	
	: No known effects from this product.
GWPmix comment	: No known effects from this product.
Other information	: Avoid release to the environment.
SECTION 13: Disposal considerations	6
13.1. Disposal methods	
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.
SECTION 14: Transport information	
Department of Transportation (DOT)	
In accordance with DOT	
Other information	: No supplementary information available.
TDG	
Transport by sea	
Air transport	
SECTION 45. Doculatory information	
SECTION 15: Regulatory information	
15.1. US Federal regulations	
BR-FA, FOR ALL PRE SOAK	estanças Control Act) inventory
Not listed on the United States TSCA (Toxic Sub	Stances Control Act, Inventory
(+)-limonene (5989-27-5)	
Listed on the United States TSCA (Toxic Substa	nces Control Act) inventory
CITRIC ACID (77-92-9)	
Listed on the United States TSCA (Toxic Substa	nces Control Act) inventory
15.2. International regulations	
CANADA	
No additional information available	

No additional information available

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EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

No additional information available

ECTION 16: Other information	
ther information	: None.
Ill text of H-phrases:	
H226	Flammable liquid and vapor
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product