

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

MSDS Name: Buffer solution pH 4
Catalog Numbers: AC258580000, AC258580010, AC258585000
Synonyms: Buffer solution made with citric acid + sodium chloride + sodium hydroxide.
Company Identification: Acros Organics BVBA
Janssen Pharmaceuticaalaa 3a
2440 Geel, Belgium
Company Identification: (USA) Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410
For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 144-33-2
Chemical Name: Disodium citrate
%: 1-20
EINECS#: 205-623-3
Hazard Symbols:
Risk Phrases:

CAS#: 7647-14-5
Chemical Name: Sodium chloride
%: 1-20
EINECS#: 231-598-3
Hazard Symbols:
Risk Phrases:

CAS#: 7732-18-5
Chemical Name: Water
%: 40-97
EINECS#: 231-791-2
Hazard Symbols:
Risk Phrases:

CAS#: 18996-35-5
Chemical Name: Monosodium citrate
%: 1-20
EINECS#: 242-734-6
Hazard Symbols:

Risk Phrases:

Text for R-phrases: see Section 16

Hazard Symbols: None listed

Risk Phrases: None listed

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Caution! May cause eye irritation. Target Organs: Eyes.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause mild skin irritation. Low hazard for usual industrial handling.

Ingestion: Low hazard for usual industrial handling. May cause gastric disturbances and electrolytic imbalance.

Inhalation: May cause respiratory tract irritation. Low hazard for usual industrial handling.

Chronic: Not expected to be a chronic hazard.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire.

Autoignition: Not available

Temperature:

Flash Point: Not applicable.

Explosion Limits: Not available

Lower:

Explosion Limits: Not available

Upper:

NFPA Rating: health: 1; flammability: 1; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Avoid contact with eyes. Keep container tightly closed.

Storage: Keep containers tightly closed.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

There are no special ventilation requirements.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Disodium citrate listed	none listed	none listed	none
Sodium chloride listed	none listed	none listed	none
Water listed	none listed	none listed	none
Monosodium citrate listed	none listed	none listed	none

OSHA Vacated PELs: Disodium citrate: None listed Sodium chloride: None listed Water: None listed Monosodium citrate: None listed

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Color: clear, colorless

Odor: odorless

pH: 3.98-4.02

Vapor Pressure: Not available

Vapor Density: Not available

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: Not available

Freezing/Melting Point: Not available

Decomposition Temperature: Not available

Solubility in water: Soluble

Specific Gravity/Density:

Molecular Formula: mixture

Molecular Weight: 0

Section 10 - Stability and Reactivity

Chemical Stability:	Stable.
Conditions to Avoid:	None reported.
Incompatibilities with Other Materials	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon monoxide, carbon dioxide, sodium oxide.
Hazardous Polymerization	Will not occur.

Section 11 - Toxicological Information

RTECS#:	CAS# 144-33-2: GE7580000 CAS# 7647-14-5: VZ4725000 CAS# 7732-18-5: ZC0110000 CAS# 18996-35-5: GE7950000
LD50/LC50:	RTECS: Not available. RTECS: CAS# 7647-14-5: Draize test, rabbit, eye: 100 mg Mild; Draize test, rabbit, eye: 100 mg/24H Moderate; Draize test, rabbit, eye: 10 mg Moderate; Draize test, rabbit, skin: 50 mg/24H Mild; Draize test, rabbit, skin: 500 mg/24H Mild; Inhalation, rat: LC50 = >42 gm/m ³ /1H; Oral, mouse: LD50 = 4 gm/kg; Oral, rat: LD50 = 3000 mg/kg; Skin, rabbit: LD50 = >10 gm/kg; . RTECS: CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg; . RTECS: CAS# 18996-35-5:
Carcinogenicity:	Disodium citrate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65. Sodium chloride - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65. Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65. Monosodium citrate - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Epidemiology:	Not available
Teratogenicity:	Not available
Reproductive:	Not available
Neurotoxicity:	Not available
Mutagenicity:	Not available
Other:	Not available

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification. RCRA P-Series: None listed. RCRA U-Series: None listed.

Section 14 - Transport Information

US DOT

Shipping Name: Not regulated

Hazard Class:

UN Number:

Packing Group:

Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

US Federal

TSCA

CAS# 144-33-2 is listed on the TSCA Inventory.
CAS# 7647-14-5 is listed on the TSCA Inventory.
CAS# 7732-18-5 is listed on the TSCA Inventory.
CAS# 18996-35-5 is listed on the TSCA Inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules Section 12b

None of the chemicals in this product are under a Chemical Test Rule.

TSCA Significant New Use Rule

None of the chemicals are listed under TSCA Section 12b.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have a SNUR under TSCA.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this material have an RQ.

SARA Codes Section 313

None of the chemicals in this product have a TPQ.

Clean Air Act:

CAS # 7647-14-5: acute.

No chemicals are reportable under Section 313.

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

STATE

Disodium citrate is not present on state lists from CA, PA, MN, MA, FL, or NJ.
Sodium chloride is not present on state lists from CA, PA, MN, MA, FL, or NJ.
Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.
Monosodium citrate is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

Risk Level:

European/International Regulations

European Labeling in Accordance with EC Directives
Hazard Symbols: Not available
Risk Phrases:

Safety Phrases:
S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)
CAS# 144-33-2: 0
CAS# 7647-14-5: 0
CAS# 7732-18-5: Not available
CAS# 18996-35-5: 0

Canada

CAS# 144-33-2 is listed on Canada's DSL List
CAS# 7647-14-5 is listed on Canada's DSL List
CAS# 7732-18-5 is listed on Canada's DSL List
CAS# 18996-35-5 is listed on Canada's DSL List
Canadian WHMIS Classifications: Not controlled.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
CAS# 144-33-2 is not listed on Canada's Ingredient Disclosure List.
CAS# 7647-14-5 is not listed on Canada's Ingredient Disclosure List.
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.
CAS# 18996-35-5 is not listed on Canada's Ingredient Disclosure List.

Section 16 - Other Information

MSDS Creation Date: 2/17/1999
Revision #5 Date 8/01/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.