SECTION 1. IDENTIFICATION

Identification of the company:	Clariant Corporation 4000 Monroe Road Charlotte, NC, 28205 Telephone No.: +1 704 331 7000 **Information of the substance/preparation:** Product Stewardship, +1-704-331-7710 **Emergency tel. number:** +1 800-424-9300 CHEMTREC

Trade name: **Exolit 855**

Primary product use: Flame retardants

Chemical family: Polycondensed phosphoric ester

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Skin corrosion : Category 1B

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements :

Prevention:

P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Phosphoric acid, polymer with (hydroxyalkyl)-alkanediol and alkanediol	Not Assigned	70 - 90
Phosphoric acid	7664-38-2	10 - 20

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

SECTION 4. FIRST AID MEASURES

General advice : Take off all contaminated clothing immediately.
Symptoms of poisoning may not appear for several hours.
Keep under medical supervision for at least 48 hours.
Get medical advice/ attention if you feel unwell.

If inhaled : Move the victim to fresh air.
Give oxygen or artificial respiration if needed.
Get immediate medical advice/ attention.
Never give anything by mouth to an unconscious person.

In case of skin contact : Wash thoroughly with soap and water for 15 minutes. If skin irritation occurs, seek medical attention.

In case of eye contact : Flush eyes with water at least 15 minutes. Get medical attention if eye irritation develops or persists.

If swallowed : If conscious, give the victim plenty of water to drink.
Consult a physician.
Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed	:	The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Foam Dry powder Water spray jet
Unsuitable extinguishing media	:	High volume water jet Carbon dioxide (CO2)
Specific hazards during firefighting	:	In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO) Carbon dioxide (CO2) Oxides of phosphorus
Further information	:	Wear suitable protective equipment.
Special protective equipment for firefighters	:	Wear personal protective equipment. In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Wear suitable protective equipment. Prevent unauthorised persons entering the zone.
Environmental precautions	:	The product should not be allowed to enter drains, water courses or the soil.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Treat recovered material as described in the section "Disposal considerations". Use neutralizing agents.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Observe the general rules of industrial fire protection
Advice on safe handling	:	Wear suitable protective equipment.

Keep container closed when not in use.
Do not breathe vapour.
Avoid contact with skin.

Further information on storage conditions : Store in original container.
Keep container tightly closed.
Store in a cool, dry, well-ventilated area.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Phosphoric acid	7664-38-2	TWA	1 mg/m3	ACGIH
		STEL	3 mg/m3	ACGIH
		TWA	1 mg/m3	NIOSH REL
		ST	3 mg/m3	NIOSH REL
		TWA	1 mg/m3	OSHA Z-1
		TWA	1 mg/m3	OSHA P0
		STEL	3 mg/m3	OSHA P0

Engineering measures : Local ventilation recommended - mechanical ventilation may be used.

Personal protective equipment

Respiratory protection : Use NIOSH/MSHA approved respirators following manufacturer's recommendations where dust or fume may be generated.
Any worker reasonably likely to be exposed must wear a NIOSH-approved respirator with an Assigned Protection Factor (APF) of 10.

Hand protection
Remarks : Butyl Rubber, PVC Or Neoprene.

Eye protection : Chemical splash goggles with face shield.

Skin and body protection : Wear disposable protective clothing, including long sleeves and gloves to prevent skin contact.

Protective measures : Observe the usual precautions for handling chemicals.
Wash face, hands and any exposed skin thoroughly after handling.

Hygiene measures : Wash hands before breaks and at the end of workday.
When using do not eat, drink or smoke.
Use protective skin cream before handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear liquid
Colour	:	colourless to slightly yellow
Odour	:	odourless
Odour Threshold	:	not determined
pH	:	ca. 2 (68 °F / 20 °C)
Melting point	:	Not applicable
Boiling point	:	212 - 399 °F / 100 - 204 °C
Flash point	:	> 392 °F / > 200 °C
Evaporation rate	:	not tested.
Flammability (solid, gas)	:	Not applicable
Self-ignition	:	The substance or mixture is not classified as pyrophoric.
Burning number	:	Not applicable
Upper explosion limit / upper flammability limit	:	not tested.
Lower explosion limit / Lower flammability limit	:	not tested.
Vapour pressure	:	23 hPa
Relative vapour density	:	not tested.
Density	:	1.5 g/cm3 (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	completely miscible
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	does not ignite

Decomposition temperature	:	408 °F / 209 °C Decomposition energy (mass): 408 kJ/kg
Viscosity Viscosity, dynamic	:	800 mPa.s (68 °F / 20 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing. The product does not contain organic peroxide-groups which result from either the manufacturing process or from added ingredients.
Surface tension	:	not determined
Metal corrosion rate	:	Not corrosive to metals
Particle size	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	The substance or mixture does not emit flammable gases in contact with water. Stable
Conditions to avoid	:	None known.
Incompatible materials	:	not known
Hazardous decomposition products	:	No decomposition if stored normally.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Skin contact
Skin Absorption
Ingestion
Inhalation

Acute toxicity

Product:

Acute oral toxicity	:	Acute toxicity estimate: 3,992 mg/kg Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Components:

Phosphoric acid:

Acute oral toxicity : Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : Remarks: Study not performed as the substance is corrosive.

Acute dermal toxicity : Remarks: Study not performed as the substance is corrosive.

Skin corrosion/irritation

Product:

Result: Causes burns.

Components:

Phosphoric acid:

Species: Rabbit
Exposure time: 24 h
Method: Other
Result: Causes burns.
GLP: no data available

Serious eye damage/eye irritation

Product:

Result: Risk of serious damage to eyes.

Components:

Phosphoric acid:

Assessment: Risk of serious damage to eyes.
Remarks: Study not performed as the substance is corrosive.

Respiratory or skin sensitisation

Product:

Result: Does not cause skin sensitisation.

Components:

Phosphoric acid:

Remarks: Study not performed as the substance is corrosive.

Assessment: Harmful if swallowed., Causes severe skin burns and eye damage.

Germ cell mutagenicity

Product:

Germ cell mutagenicity - Assessment : No information available.

Components:

Phosphoric acid:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Concentration: 50 - 5000 µg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster lung cells
Concentration: 112,5 - 450 µg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

Carcinogenicity

Product:

Carcinogenicity - Assessment : No information available.

Components:

Phosphoric acid:

Carcinogenicity - Assessment : No information available.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Product:

Reproductive toxicity - Assessment : No information available.

No information available.

Components:

Phosphoric acid:

Effects on fertility : Test Type: One generation study
Species: Rat, male and female
Strain: Sprague-Dawley
Application Route: oral (gavage)
Dose: 0, 125, 250 and 500 mg/kg
Duration of Single Treatment: 42 - 54 d
General Toxicity F1: NOAEL: >= 500 mg/kg body weight
Method: OECD Test Guideline 422
GLP: yes

Effects on foetal development : Test Type: Pre-natal
Species: Mouse, female
Strain: CD1
Application Route: oral (gavage)
Dose: 3,7 - 17,2 - 79,7 - 370 mg/kg
Duration of Single Treatment: 10 d
General Toxicity Maternal: NOAEL: >= 370 mg/kg body weight
Teratogenicity: NOAEL: >= 370 mg/kg body weight
Method: OECD Test Guideline 414
GLP: no
Remarks: By analogy with a product of similar composition

Test Type: Pre-natal
Species: Rat, female
Strain: wistar
Application Route: oral (gavage)
Dose: 4,1 - 19 - 88,3 - 410 mg/kg
Duration of Single Treatment: 10 d
General Toxicity Maternal: NOAEL: >= 410 mg/kg body weight
Teratogenicity: NOAEL: >= 410 mg/kg body weight
Method: OECD Test Guideline 414
GLP: no

Remarks: By analogy with a product of similar composition

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT - single exposure

Components:

Phosphoric acid:

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Components:

Phosphoric acid:

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Product:

Remarks: This information is not available.

Components:

Phosphoric acid:

Species: Rat, male and female
NOAEL: 250 mg/kg
Application Route: oral (gavage)
Exposure time: 42 d (m), 54 d (fem)
Number of exposures: daily
Dose: 125 - 250 - 500 mg/kg
Group: yes
Method: OECD Test Guideline 422
GLP: yes

Repeated dose toxicity - Assessment : Harmful if swallowed., Causes severe skin burns and eye damage.

Aspiration toxicity

Components:

Phosphoric acid:

No aspiration toxicity classification

Experience with human exposure

Product:

General Information : The possible symptoms known are those derived from the labelling (see section 2).

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish :
Remarks: no data available

Toxicity to daphnia and other aquatic invertebrates :
Remarks: no data available

Toxicity to algae/aquatic plants :
Remarks: no data available

Toxicity to microorganisms : Remarks: no data available

Components:

Phosphoric acid:

Toxicity to fish : LD50 (Lepomis macrochirus (Bluegill sunfish)): pH 3-3,3
End point: mortality
Exposure time: 96 h
Test Type: Other
Analytical monitoring: no
Method: Other
GLP: no data available

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

NOEC (Daphnia magna (Water flea)): 56 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes
Remarks: The details of the toxic effect relate to the nominal concentration.

Toxicity to algae/aquatic : ErC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l

plants		End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes NOEC (Desmodesmus subspicatus (green algae)): 100 mg/l End point: Growth rate Exposure time: 72 h Test Type: static test Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes
Toxicity to fish (Chronic toxicity)	:	Remarks: not required
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: not required
Toxicity to microorganisms	:	EC50 (activated sludge): > 1,000 mg/l End point: Bacteria toxicity (respiration inhibition) Exposure time: 3 h Test Type: static test Analytical monitoring: no Method: OECD Test Guideline 209 GLP: yes
Plant toxicity	:	Remarks: Not applicable
Toxicity to terrestrial organisms	:	Remarks: Not applicable

Persistence and degradability

Product:

Biodegradability	:	Remarks: This property is substance-specific and therefore cannot be given for the preparation.

Components:

Phosphoric acid:

Biodegradability	:	Remarks: Not applicable

Bioaccumulative potential

Product:

Bioaccumulation	:	Remarks: not tested.

Components:

Phosphoric acid:

Bioaccumulation : Remarks: Does not bioaccumulate.
Not relevant for inorganic substances

Mobility in soil

no data available

Other adverse effects

Product:

Environmental fate and pathways : Remarks: no data available

Additional ecological information : no data available

Components:

Phosphoric acid:

Results of PBT and vPvB assessment : The substance is not identified as a PBT or as a vPvB substance.
Remarks: Not relevant for inorganic substances

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

RCRA - Resource Conservation and Recovery Authorization Act : This product, if discarded as sold, is not a Federal RCRA hazardous waste.

Waste Code : NONE

Waste from residues : Small quantities may be treated in aerobic wastewater treatment systems. Larger quantities may be incinerated or landfilled after solidification in permitted systems.

Contaminated packaging : Packaging that cannot be cleaned should be disposed of as product waste

SECTION 14. TRANSPORT INFORMATION

DOT Regulation:

UN/NA-number: UN 1805
Proper shipping name: Phosphoric acid solution

Primary hazard class: 8
Packing group: III

Reportable Quantity:	11,350.000 kg Phosphoric acid
Emergency Response Guide:	153

IATA

UN/ID number:	UN 1805
Proper shipping name:	Phosphoric acid, solution
Primary risk:	8
Packing group:	III
Remarks:	Shipment permitted

IMDG

UN no.:	UN 1805
Proper shipping name:	Phosphoric acid, solution
Primary risk:	8
Packing group:	III
EmS:	F-A S-B

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Water Act

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

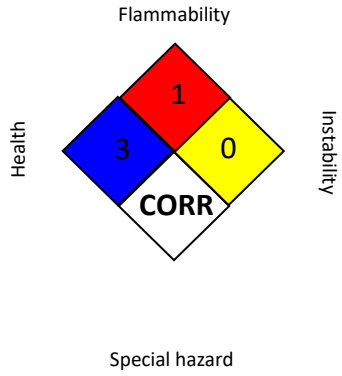
The components of this product are reported in the following inventories:

TSCA : One or more of the components of this product is not listed on the Toxic Substances Control Act (TSCA) Inventory. The product is thus sold under the restriction that it is only for use in research and development. This product must be used under the supervision of a technically qualified individual capable of understanding its potential hazards.

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA Z-1 / TWA	:	8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing

Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

On the basis of an extensive test program, which had to be submitted to the competent authority on the occasion of the Notification of the substance in the European Community, this product was found to be toxicologically not dangerous within the meaning of the EC Directives.

Revision Date : 05/01/2020

US / EN