SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Identifier: (4N) 99.99% Phosphorus(III) Trichloride

Product Code: P3-CL-04-LIQ

CAS Number: 7719-12-2

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351
Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
GHS06 Skull and crossbones
Acute Tox. 2 H300 Fatal if swallowed.
Acute Tox. 2 H330 Fatal if inhaled.
GHS08 Health hazard
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
GHS05 Corrosion
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
GHS label elements
The substance is classified and labeled according to the Globally Harmonized System (GHS).

Hazard pictograms
GHS05 GHS06 GHS08
Signal word Danger
Hazard-determining components of labeling:
Phosphorus trichloride, 98%
Hazard statements
H300+H330 Fatal if swallowed or if inhaled.

H314 Causes severe skin burns and eye damage.
H373 May cause damage to organs through prolonged or repeated exposure.
Precautionary statements
P231 Handle under inert gas.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/
shower.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present
and easy to do. Continue rinsing.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P422 Store contents under inert gas.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
Classification system:
NFPA ratings (scale 0 - 4)
3
0
2
W-
Health = 3
Fire = 0
Reactivity = 2
The substance demonstrates unusual reactivity with water.
HMIS-ratings (scale 0 - 4)
HEALTH
FIRE
REACTIVITY
*4
0
2
Health = *4
Fire = 0
Reactivity = 2
Other hazards
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS # / Substance Name
7719-12-2 Phosphorus trichloride, 98%
Identification number(s)
EC number: 23-1
Index number: 015-007-00-4

SECTION 4. FIRST AID MEASURES

Description of first aid measures
General information:
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours
after the accident.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
If inhaled:
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
In case of skin contact: Immediately wash with soap and water; rinse thoroughly.
In case of eye contact: Rinse opened eye for several minutes under running water. Consult a physician.
If swallowed:
Do not induce vomiting; immediately call for medical help.
Drink copious amounts of water and provide fresh air. Immediately call a doctor.
Information for doctor:
Most important symptoms and effects, both acute and delayed:
No data available
Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture
During heating or in case of fire poisonous gases are produced.
Advice for firefighters
Protective equipment: Mouth respiratory protective device.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Mount respiratory protective device.
Use personal protective equipment. Keep unprotected persons away.
Environmental precautions: No special measures required.
Methods and materials for containment and cleanup:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Handling:
Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
Information about protection against explosions and fires: Keep respiratory protective device available.
Conditions for safe storage, including any incompatibilities:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions:
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Specific end use(s) No data available

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems: No further data; see item 7.
Control parameters
Components with limit values that require monitoring at the workplace:
7719-12-2 Phosphorus trichloride, 98%

PEL Long-term value: 3 mg/m^3, 0.5 ppm

REL Short-term value: 3 mg/m^3, 0.5 ppm

Long-term value: 1.5 mg/m^3, 0.2 ppm

TLV Short-term value: 2.8 mg/m^3, 0.5 ppm

Long-term value: 1.1 mg/m^3, 0.2 ppm
Additional information: The lists that were valid during the creation were used as basis.
Exposure controls
Personal protective equipment:
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use
respiratory protective device that is independent of circulating air.
Protection of hands:
SProtective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the
chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of

quality and
varies from manufacturer to manufacturer.
Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be
observed.
Eye protection:
RTightly sealed goggles

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Liquid
Color: Clear
Odor: Acidic
Odor threshold: No data available.
pH: No data available.
Melting point/Melting range: -111.8 °C (-169 °F)
Boiling point/Boiling range: 76 °C (169 °F)
Flash point: N/A
Flammability (solid, gas): N/A
Ignition temperature:
Decomposition temperature: No data available.
Autoignition: No data available.
Danger of explosion: Product does not present an explosion hazard.
Explosion limits:
Lower: No data available.
Upper: No data available.
Vapor pressure at 20 °C (68 °F): no data hPa

Density at 20 °C (68 °F): 1.574 g/cm^3 (13.135 lbs/gal)
Relative density No data available.
Vapor density No data available.
Evaporation rate No data available.
Solubility in / Miscibility with
Water: Not miscible or difficult to mix.
Partition coefficient (n-octanol/water): No data available.
Viscosity:
Dynamic: No data available.
Kinematic: No data available.
Solvent content:
Organic solvents: 0.0 %
VOC content: 0.0 g/l / 0.00 lb/gl
Other information No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity No data available
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.
Conditions to avoid No data available
Incompatible materials: No data available
Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
LD/LC50 values that are relevant for classification:
Oral LD50 18 mg/kg (rat)
7719-12-2 Phosphorus trichloride, 98%
Oral LD50 18 mg/kg (rat)
Primary irritant effect:
on the skin: Strong caustic effect on skin and mucous membranes.
on the eye: Strong caustic effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus
and stomach.
Carcinogenic categories
IARC (International Agency for Research on Cancer)
Substance is not listed.
NTP (National Toxicology Program)
Substance is not listed.
OSHA-Ca (Occupational Safety & Health Administration)
Substance is not listed.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity: No data available
Persistence and degradability No data available
Behavior in environmental systems:
Bioaccumulative potential No data available
Mobility in soil No data available
Additional ecological information: Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A
Other adverse effects No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation:
Must not be disposed of together with household garbage. Do not allow product to enter drains, sewage systems, or other water courses system.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations

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SECTION 14. TRANSPORT INFORMATION

UN-Number
DOT, IMDG, IATA UN1809
UN proper shipping name
DOT, IATA Phosphorus trichloride
IMDG PHOSPHORUS TRICHLORIDE
Transport hazard class(es)
DOT
Class 6.1 Toxic substances
Label 6.1, 8
IMDG
Class 6.1 Toxic substances
Label 6.1/8
IATA
Class 6.1 Toxic substances
Label 6.1 (8)
Packing group
DOT, IMDG, IATA I
Environmental hazards:
Marine pollutant: No
Special precautions for user N/A
Poison inhalation hazard: Yes
Danger code (Kemler): 668
EMS Number: F-A,S-B
Segregation groups Acids
Stowage Category D
Stowage Code SW2 Clear of living quarters.
Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code N/A
Transport/Additional information:
DOT
Quantity limitations On passenger aircraft/rail: Forbidden
On cargo aircraft only: Forbidden
IMDG
Limited quantities (LQ) 0
Excepted quantities (EQ) Code: E0
Not permitted as Excepted Quantity
UN "Model Regulation": UN 1809 PHOSPHORUS TRICHLORIDE, 6.1 (8), I

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
Sara
Section 355 (extremely hazardous substances):
Substance is listed.
Section 313 (Specific toxic chemical listings):
Substance is not listed.

TSCA (Toxic Substances Control Act):
Substance is listed.
Proposition 65
Chemicals known to cause cancer:
Substance is not listed.
Chemicals known to cause reproductive toxicity for females:
Substance is not listed.
Chemicals known to cause reproductive toxicity for males:
Substance is not listed.
Chemicals known to cause developmental toxicity:
Substance is not listed.
Carcinogenic categories
EPA (Environmental Protection Agency)
Substance is not listed.
TLV (Threshold Limit Value established by ACGIH)
Substance is not listed.
NIOSH-Ca (National Institute for Occupational Safety and Health)
Substance is not listed.
GHS label elements
The substance is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms
GHS05 GHS06 GHS08
Signal word Danger
Hazard-determining components of labeling:
Phosphorus trichloride, 98%
Hazard statements
H300+H330 Fatal if swallowed or if inhaled.
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shower.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present
and easy to do. Continue rinsing.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P422 Store contents under inert gas.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.