

Safety Data Sheet acc. to OSHA HCS (HazCom 2012)

Printing date 05/14/2020

Reviewed on 05/14/2020

1 Identification

- **Product identifier**
- **Trade name:** Nickel-51 / Phosphate-5 / -103
- **Catalogue number:** 424401, 424076, 424076-0, 424076-05, 424076-10
- **CAS Number:**
7727-54-0
- **Application of the substance / the mixture:** Reagent for water analysis
- **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany
- **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS03 Flame over circle

Ox. Sol. 3 H272 May intensify fire; oxidizer.



GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**

• **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS03



GHS07



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
ammonium persulphate
- **Hazard statements**
H272 May intensify fire; oxidizer.

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- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H317 May cause an allergic skin reaction.
- H335 May cause respiratory irritation.

- **Precautionary statements**

- P261 Avoid breathing dust.
- P280 Wear protective gloves/protective clothing/eye protection.
- P302+P352 If on skin: Wash with plenty of water.
- 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.
- P313 Get medical advice/attention.

- **Other hazards** No further relevant information available.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
7727-54-0 ammonium persulphate
- **Identification number(s)**
- **EC number:** 231-786-5

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Personal protection for the First Aider.
Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air or oxygen; call for doctor.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Seek medical treatment.
- **After eye contact:** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment.
- **Most important symptoms and effects, both acute and delayed**
allergic reactions
irritations
after inhalation:
coughing
mucous membrane irritation
breathing difficulty
after swallowing:
resorption
sickness
vomiting
diarrhoea
after absorption of large amounts:
headache
drop in blood pressure
CNS disorders
cramps
narcotic conditions
respiratory paralysis
- **Danger:**
risk of airways sensitization
risk of skin sensitization

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· **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Carbon dioxide (CO₂), Foam, Fire-extinguishing powder
Water spray
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
The product is not combustible.
Has a fire-promoting effect due to release of oxygen.
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
nitrous gases
Nitrogen oxides (NO_x)
Sulfur oxides (SO_x)
NH₃
- **Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Cool endangered receptacles with water spray.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Avoid substance contact.
Ensure adequate ventilation
Avoid inhalation of dust.
- **Advice for emergency responders:** Protective equipment: see section 8
- **Environmental precautions:** Do not allow product to reach sewage system or any water course.
- **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Pick up mechanically.
Dispose contaminated material as waste according to item 13.
- **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling**
- **Advice on safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Provide suction extractors if dust is formed.
- **Hygiene measures:**
Do not inhale dust / smoke / mist.
Avoid contact with the skin.
Avoid contact with the eyes.
Take off immediately all contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.

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- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Protect from heat.
- **Information about storage in one common storage facility:**
Store away from flammable substances.
Store away from reducing agents.
Do not store together with acids.
Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Protect from exposure to the light.
Store in dry conditions.
Protect from humidity and water.
This product is hygroscopic.
- **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)
- **Specific end use(s)** No further relevant information available.

* 8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

CAS: 7727-54-0 ammonium persulfate

TLV (USA)	Long-term value: 0.1 mg/m ³ as persulfate
EL (Canada)	Long-term value: 0.1 mg/m ³ as persulfate

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.
- **Personal protective equipment:**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
- **Breathing equipment:** Use respiratory protective device against the effects of fume/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Protection of hands:**
Protective gloves
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
- **Material of gloves**
Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
- **Penetration time of glove material**
Breakthrough time: > 480 min
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment:**
Do not allow product to reach sewage system or any water course.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **Appearance:**
Form / Physical state: Crystalline powder

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Color:	White
· Odor:	Odorless
· Odor threshold:	Not applicable.
· pH-value (100 g/l) at 20°C (68°F):	3.2
· Melting point/freezing point:	120°C (248°F) Decomposition
· Initial boiling point and boiling range:	Not applicable.
· Flash point:	Not applicable.
· Flammability (solid, gas):	Contact with combustible material may cause fire.
· Ignition temperature:	Not applicable.
· Decomposition temperature:	> 120 °C (> 248 °F)
· Auto-ignition temperature:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Flammability or explosive limits:	
Lower:	Not applicable.
Upper:	Not applicable.
· Oxidizing properties:	May intensify fire; oxidizer.
· Vapor Pressure:	Not applicable.
· Density at 20°C (68°F):	1.98 g/cm ³ (16.52 lbs/gal)
· Relative density:	Not determined.
· Vapor density:	Not applicable.
· Evaporation rate:	Not applicable.
· Solubility(ies)	
Water at 20°C (68°F):	620 g/l Easily soluble.
· Partition coefficient (n-octanol/water):	Not applicable.
· Viscosity:	Not applicable.
· Organic solvents:	0.0 %
· Solids content:	100.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** see section "Possibility of hazardous reactions"
- **Chemical stability** Stable at ambient temperature (room temperature).
- **Possibility of hazardous reactions**
 - Aqueous solution reacts acidic.
 - Aqueous solution reacts with metals.
 - Reacts with powdered metals.
 - Reacts with reducing agents.
 - Reacts with peroxides.
 - Reacts with strong acids and alkali.
 - Reacts with ammonia (NH₃).
- **Conditions to avoid** Strong heating (decomposition)
- **Incompatible materials:**
 - combustible materials
 - organic substances
 - aluminum
 - copper
 - zinc
 - Iron
- **Hazardous decomposition products:**
 - Ammonia (NH₃)
 - oxygen

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In case of fire: see section 5.

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*11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:** Harmful if swallowed.

- **Acute toxicity estimate (ATE_(MIX)) - Calculation method:**

Oral	GHS ATE _(MIX)	742 mg/kg (ATE)
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- **LD/LC50 values that are relevant for classification:**

- **CAS: 7727-54-0 ammonium persulphate**

Oral	LD50	742 mg/kg (rat) (OECD 401)
Dermal	LD ₀	2000 mg/kg (rat) (MERCK, ECHA)
Inhalative	LC ₀	2.95 mg/l (rat) (4h, OECD 403) (MERCK, ECHA)

- **Primary irritant effect:**

- **on the skin:** Causes skin irritation.

- **on the eye:** Causes serious eye irritation.

- **Information on components:**

- **CAS: 7727-54-0 ammonium persulphate**

Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: no irritation)

- **Sensitization:**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

- **Information on components:**

- **CAS: 7727-54-0 ammonium persulphate**

Sensitization	OECD 406	(guinea pig: positive)
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- **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.

- **Other information:** see section 8 / 15

- **Synergistic Products:** None

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**

- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

- **Carcinogenicity** Based on available data, the classification criteria are not met.

- **Reproductive toxicity** Based on available data, the classification criteria are not met.

- **STOT (specific target organ toxicity) -single exposure** May cause respiratory irritation.

- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.

- **Aspiration hazard** Based on available data, the classification criteria are not met.

- **Information on components:**

OECD 414: Teratogenicity testing

OECD 473: Mutagenicity testing

OECD 471, 474, 476, 487: Germ cell mutagenicity testing

- **CAS: 7727-54-0 ammonium persulphate**

OECD 471	(guinea pig: negative) (Bacterial Reverse Mutation Test - Ames test) (Salmonella typhimurium)
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OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test) (Merck, In vivo micronucleus test, mouse, male and female, intraperitoneally, Erythrocytes / Bone marrow)
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12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

CAS: 7727-54-0 ammonium persulphate

EC50	120 mg/l/48h (Daphnia magna) (IUCLID)
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LC50	76 mg/l/96h (rainbow trout) (IUCLID)
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- **Bacterial toxicity:**

CAS: 7727-54-0 ammonium persulphate

EC10	36 mg/l (Pseudomonas putida) (18h) (IUCLID)
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- **Other information:**

Toxic for fish:

sulfates > 7 g/l

NH₄⁺ > 0.3 mg/l

- **Persistence and degradability** No further relevant information available.
- **Other information:** Methods for the determination of biodegradability are not applicable to inorganic substances.
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Other adverse effects**
Reacts with water to form toxic decomposition products.
Avoid transfer into the environment.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA**

UN1444

- **UN proper shipping name**

- **DOT**

Ammonium persulfate

- **IMDG, IATA**

AMMONIUM PERSULPHATE

- **Transport hazard class(es)**

- **DOT**



- **Class**

5.1 Oxidizing substances

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· Label	5.1
· IMDG, IATA	
	
· Class	5.1 Oxidizing substances
· Label	5.1
· Packing group	
· DOT, IMDG, IATA	III
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Oxidizing substances
· Hazard identification number (Kemler code):	50
· EMS Number:	F-A,S-Q
· Segregation groups	Ammonium compounds
· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 25 kg On cargo aircraft only: 100 kg
· IMDG	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g

*15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture

· Sara

· Section 355 (Extremely hazardous substances):

Substance is not listed.

· Section 313 (Specific toxic chemical listings):

Substance is not listed.

· TSCA (Toxic Substances Control Act):

ACTIVE

· Hazardous Air Pollutants

Substance is not 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.

· New Jersey Right-to-Know List:

Substance is listed.

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<ul style="list-style-type: none"> • New Jersey Special Hazardous Substance List:
Substance is not listed.
<ul style="list-style-type: none"> • Pennsylvania Right-to-Know List:
Substance is not listed.
<ul style="list-style-type: none"> • Pennsylvania Special Hazardous Substance List:
Substance is not listed.
<ul style="list-style-type: none"> • EPA (Environmental Protection Agency)
Substance is not listed.
<ul style="list-style-type: none"> • NIOSH-Ca (National Institute for Occupational Safety and Health)
Substance is not listed.

- **Information about limitation of use:** Employment restrictions concerning young persons must be observed.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Date of preparation / last revision** 05/14/2020 / 10
- **Abbreviations and acronyms:**
 - OECD: Organisation for Economic Co-operation and Development
 - STOT: specific target organ toxicity
 - SE: single exposure
 - RE: repeated exposure
 - EC50: half maximal effective concentration
 - IC50: half maximal inhibitory concentration
 - NOEL or NOEC: No Observed Effect Level or Concentration
 - ACGIH® - American Conference of Governmental Industrial Hygienists
 - A1 - Confirmed human carcinogen
 - A2 - Suspected human carcinogen
 - A3 - Confirmed animal carcinogen with unknown relevance to humans
 - A4 - Not classifiable as a human carcinogen
 - A5 - Not suspected as a human carcinogen
 - IARC - International Agency for Research on Cancer
 - Group 1 - Carcinogenic to humans
 - Group 2A - Probably carcinogenic to humans
 - Group 2B - Possibly carcinogenic to humans
 - Group 3 - Not classifiable as to carcinogenicity to humans
 - Group 4 - Probably not carcinogenic to humans
 - NTP - National Toxicology Program, U.S. Department of Health and Human Services
 - Group K - Known to be Human Carcinogens
 - Group R - Reasonably Anticipated to be Human Carcinogens
 - IMDG: International Maritime Code for Dangerous Goods
 - DOT: US Department of Transportation
 - IATA: International Air Transport Association
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - NIOSH: National Institute for Occupational Safety
 - OSHA: Occupational Safety & Health
 - TLV: Threshold Limit Value
 - PEL: Permissible Exposure Limit
 - REL: Recommended Exposure Limit
 - Ox. Sol. 3: Oxidizing solids – Category 3
 - Acute Tox. 4: Acute toxicity – Category 4
 - Skin Irrit. 2: Skin corrosion/irritation – Category 2
 - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 - Resp. Sens. 1: Respiratory sensitisation – Category 1
 - Skin Sens. 1: Skin sensitisation – Category 1
 - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- **Sources**
 - Data arise from safety data sheets, reference works and literature.
 - IUCLID (International Uniform Chemical Information Database)
 - ECHA: European Chemicals Agency <http://echa.europa.eu>
- *** Data compared to the previous version altered.**