Safety Data Sheet

According to U.S.A. Federal Hazcom 2012

1. Identification

1.1. Product identifier

Code: **PLTI1**

Product name **Titanium ICP in 2% Nitric Acid, 1% Hydrofluoric Acid**

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use **For Laboratory Use Only.**

1.3. Details of the supplier of the safety data sheet

Name **EXAXOL CHEMICAL CORPORATION**

Full address **14325 60 TH ST N**

District and Country **33760 CLEARWATER - FLORIDA**
US

Tel. 1-727-524-7732

Fax 1-727-532-8221

e-mail address

info@exaxol.com

1.4. Emergency telephone number

For urgent inquiries refer to **1-800-255-3924**
ChemTel Inc.

2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200). The product thus requires a safety datasheet.
Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Classification and Hazard Statement

Hazard pictograms:

Carcinogenicity, category 2	Suspected of causing cancer.
Acute toxicity, category 3	Toxic in contact with skin.
Acute toxicity, category 4	Harmful if swallowed.
Serious eye damage, category 1	Causes serious eye damage.
Skin irritation, category 2	Causes skin irritation.



Signal words: Danger

Hazard statements:

H351	Suspected of causing cancer.
H311	Toxic in contact with skin.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H315	Causes skin irritation.

Precautionary statements:

Prevention:

P202	Do not handle until all safety precautions have been read and understood.
P201	Obtain special instructions before use.
P280	Wear protective gloves/ protective clothing / eye protection / face protection.
P270	Do not eat, drink or smoke when using this product.
P264	Wash skin thoroughly after handling.

Response:

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 POISON CENTER / doctor.
P330	Rinse mouth.
P302+P352	IF ON SKIN: wash with plenty of water.
P361+P364	Take off immediately all contaminated clothing and wash it before reuse.
P362+P364	Take off contaminated clothing and wash it before reuse.
P301+P312	IF SWALLOWED: Call a POISON CENTER / doctor / . . . / if you feel unwell.

Storage:

P405	Store locked up.

Disposal:

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

The mixture contains 2.50%;2.50% of components of unknown acute oral / dermal toxicity.

2.2. Other hazards

Information not available

3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification:
WATER		

CAS 7732-18-5	95 ≤ x < 97	
EC 231-791-2		
INDEX -		
NITRIC ACID		
CAS 7697-37-2	2 ≤ x < 2,5	Oxidising liquid, category 2 H272, Skin corrosion, category 1A H314, Serious eye damage, category 1 H318
EC 231-714-2		
INDEX 007-004-00-1		
Hydrofluoric Acid		
CAS 7664-39-3	1 ≤ x < 1,5	Acute toxicity, category 1 H310, Acute toxicity, category 2 H300, Acute toxicity, category 2 H330, Skin corrosion, category 1A H314, Serious eye damage, category 1 H318
EC 231-634-8		
INDEX 009-003-00-1		
TITANIUM DIOXIDE		
CAS 13463-67-7	0,1 ≤ x < 0,4	Carcinogenicity, category 2 H351
EC 236-675-5		
INDEX -		

The full wording of hazard (H) phrases is given in section 16 of the sheet.

4. First-aid measures

4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.
INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.
INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

4.2. Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

4.3. Indication of any immediate medical attention and special treatment needed

Information not available

5. Fire-fighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

7. Handling and storage

7.1. Precautions for safe handling

Ensure that there is an adequate earthing system for the equipment and personnel. Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store in a ventilated and dry place, far away from sources of ignition. Keep containers well sealed. Keep the product in clearly labelled containers. Avoid overheating. Avoid violent blows. Keep containers away from any incompatible materials, see section 10 for details.

7.3. Specific end use(s)

Information not available

8. Exposure controls/personal protection

8.1. Control parameters

Regulatory References:

USA	NIOSH-REL	NIOSH publication No. 2005-149, 3th printing, 2007.
USA	OSHA-PEL	Occupational Exposure Limits - Limits for Air Contaminants TABLE Z-1-1910.1000.
USA	CAL/OSHA-PEL	California Division of Occupational Safety and Health (Cal-OSHA) Permissible Exposure Limits (PELs).
EU	OEL EU	Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 91/322/EEC.
	TLV-ACGIH	ACGIH 2018

NITRIC ACID

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
TLV-ACGIH	-	5.2	2	10.3	4	
OEL	EU			2.6	1	
OSHA	USA	5	2			
CAL/OSHA	USA	5	2	10	4	
NIOSH	USA	5	2	10	4	

Hydrofluoric Acid

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
OSHA	USA		3			
CAL/OSHA	USA	0.33	0.4	0.83	1	SKIN
NIOSH	USA	2.5	3	5 (C)	6 (C)	

TITANIUM DIOXIDE

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m3	ppm	mg/m3	ppm	
TLV-ACGIH	-	10				
OSHA	USA	15				INHAL
CAL/OSHA	USA	10				INHAL
CAL/OSHA	USA	5				RESP

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. Personal protective equipment must comply with current regulations.

HAND PROTECTION
Protect hands with category III work gloves (OSHA 29 CFR 1910.138).
The following should be considered when choosing work glove material: compatibility, degradation, failure time and permeability.

The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION
Wear category I professional long-sleeved overalls and safety footwear. Wash body with soap and water after removing protective clothing.

EYE PROTECTION
Wear airtight protective goggles (OSHA 29 CFR 1910.133).

RESPIRATORY PROTECTION
If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, wear a mask with a NIOSH certified filter, whose class must be chosen according to the limit of use concentration (NIOSH 42 CFR 84, OSHA 29 CFR 1910.134). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.
If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus or external air-intake breathing apparatus. For a correct choice of respiratory protection device, see standard NIOSH 42 CFR 84, OSHA 29 CFR 1910.134.

ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Not available
Colour	Not available
Odour	Not available
Odour threshold	Not available
pH	Not available
Melting point / freezing point	Not available
Initial boiling point	Not available
Boiling range	Not available
Flash point	> 93 °C
Evaporation Rate	Not available
Flammability of solids and gases	Not available
Lower inflammability limit	Not available
Upper inflammability limit	Not available
Lower explosive limit	Not available
Upper explosive limit	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	1.01
Solubility	Not available
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Explosive properties	Not available
Oxidising properties	Not available

9.2. Other information

Information not available

10. Stability and reactivity

10.1. Reactivity

NITRIC ACID

Decomposes at 84°C/183°F.Possibility of self-ignition.

10.2. Chemical stability

Hydrofluoric Acid

Stable in normal conditions of use and storage.

10.3. Possibility of hazardous reactions

The product may react violently with water.

10.4. Conditions to avoid

Avoid overheating. Prevent moisture or water from penetrating inside the containers.

NITRIC ACID

Avoid exposure to: heat,light.

10.5. Incompatible materials

NITRIC ACID

Incompatible with: flammable substances,reducing substances,alcohol,metals,basic substances,acetone,acetic acid,acetic anhydride.Incompatible materials: plastic materials.

Hydrofluoric Acid

Incompatible materials: metals.

Incompatible with: alkaline metals,strong bases.

10.6. Hazardous decomposition products

NITRIC ACID

May develop: nitric oxide.

11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on toxicological effects

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

Corrosive to the respiratory tract.

NITRIC ACID

LC50 (Inhalation) 67 ppm/4h Rat

TITANIUM DIOXIDE

LD50 (Oral) > 10000 mg/kg Rat

SKIN CORROSION / IRRITATION

Causes skin irritation

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Suspected of causing cancer

Carcinogenicity Assessment:
13463-67-7TITANIUM DIOXIDE
ACGIH:: A4
IARC:2B

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

12.1. Toxicity

Information not available

12.2. Persistence and degradability

NITRIC ACID
Solubility in water > 1000000 mg/l
Degradability: information not available

TITANIUM DIOXIDE
Solubility in water < 0,001 mg/l
Degradability: information not available

12.3. Bioaccumulative potential

NITRIC ACID

Partition coefficient: n-octanol/water	< 3

12.4. Mobility in soil

Information not available

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

12.6. Other adverse effects

Information not available

13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

14. Transport information

UN3264, Corrosive Liquid, Acidic, Inorganic, n.o.s., (Nitric acid, Hydrofluoric Acid), 8, PG II

15. Regulatory information

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

U.S. Federal Regulations

TSCA:

All components are listed on TSCA Inventory.

Clean Air Act Section 112(b):

7664-39-3	Hydrofluoric Acid

Clean Air Act Section 602 Class I Substances:

No component(s) listed.

Clean Air Act Section 602 Class II Substances:

No component(s) listed.

Clean Water Act –
Priority Pollutants:

No component(s) listed.

Clean Water Act –
Toxic Pollutants:

No component(s) listed.

DEA List I Chemicals (Precursor Chemicals):

No component(s) listed.

DEA List II Chemicals (Essential Chemicals):

No component(s) listed.

EPA List of Lists:

313 Category Code:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid

EPCRA 302 EHS TPQ:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid

EPCRA 304 EHS RQ:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid

CERCLA RQ:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid

EPCRA 313 TRI:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid

RCRA Code:

7664-39-3	Hydrofluoric Acid

CAA 112 (r) RMP TQ:

No component(s) listed.

State Regulations

Massachussetts:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid
13463-67-7	TITANIUM DIOXIDE (Titanium dioxide (airborne, unbound particles

	of respirable size))

Minnesota:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid
13463-67-7	TITANIUM DIOXIDE (Titanium dioxide (airborne, unbound particles of respirable size))

New Jersey:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid
13463-67-7	TITANIUM DIOXIDE (Titanium dioxide (airborne, unbound particles of respirable size))

New York:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid

Pennsylvania:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid
13463-67-7	TITANIUM DIOXIDE (Titanium dioxide (airborne, unbound particles of respirable size))

California:

7697-37-2	NITRIC ACID
7664-39-3	Hydrofluoric Acid

Proposition 65:

WARNING! This product contains chemicals known to the State of California to cause cancer and birth defects or reproductive harm.

13463-67-7	TITANIUM DIOXIDE C (Titanium dioxide (airborne, unbound particles of respirable size))

International Regulations

Substances subject to exportation reporting pursuant to (EC) Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Candadian WHMIS

Information not available

16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

H272	May intensify fire; oxidiser.
H351	Suspected of causing cancer.
H310	Fatal in contact with skin.
H300	Fatal if swallowed.
H330	Fatal if inhaled.
H311	Toxic in contact with skin.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H315	Causes skin irritation.

LEGEND:
- 313 CATEGORY CODE: Emergency Planning and Community Right-to Know Act Section 313 Category Code
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAA 112 ® RMP TQ: Risk Management Plan Threshold Quantity (Clean Air Act Section 112®)
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CERCLA RQ: Reportable Quantity (Comprehensive Environment Response, Compensation, and Liability Act)
- CLP: EC Regulation 1272/2008
- DEA: Drug Enforcement Administration
- EmS: Emergency Schedule
- EPA: US Environmental Protection Agency
- EPCRA: Emergency Planning and Community Right-to Know Act
- EPCRA 302 EHS TPQ: Extremely Hazardous Substance Threshold Planning Quantity (Section 302 Category Code)
- EPCRA 304 EHS RQ: Extremely Hazardous Substance Reportable Quantity (Section 304 Category Code)
- EPCRA 313 TRI: Toxics Release Inventory (Section 313 Category Code)
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PEL: Predicted exposure level
- RCRA Code: Resource Conservation and Recovery Act Code
- REL: Recommended exposure limit
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TSCA: Toxic Substances Control Act
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- WHMIS: Workplace Hazardous Materials Information System.

GENERAL BIBLIOGRAPHY:

- GHS rev. 3
- The Merck Index. 10th Edition
- Handling Chemical Safety
- Niosh - Registry of Toxic Effects of Chemical Substances
- INRS - Fiche Toxicologique (toxicological sheet)

- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy
- 6 NYCRR part 597
- Cal/OSHA website
- California Safe Drinking Water and Toxic Enforcement Act
- EPA website
- Hazard Comunication Standard (HCS 2012)
- IARC website
- List Of Lists EPA: Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112® of the Clean Air Act
- Massachussetts 105 CMR Department of public health 670.000: "Right to Know"
- Minensota Chapter 5206 Departemnt Of Labor and Industry Hazardous Substances, Employee "Right to Know".
- New Jersey Worker and Community Right to know Act N.J.S.A.
- NTP. 2011. Report on Carcinogens, 12th Edition.
- OSHA website
- Pennsylvania, Hazardous Substance List, Chapter 323

Note for users:
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Provide appointed staff with adequate training on how to use chemical products.

Changes to previous review:
The following sections were modified:
01 / 02 / 03 / 04 / 05 / 08 / 09 / 10 / 11 / 12 / 13 / 14 / 16.