

# 10M29-1 Lithium (10,000µg/mL in 1% HNO3)

### **High-Purity Standards**

Catalogue number: 10M29-1

Version No: 2.2

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

### Chemwatch Hazard Alert Code: 4

Issue Date: **09/02/2016**Print Date: **09/02/2016**S.GHS.USA.EN

### **SECTION 1 IDENTIFICATION**

### **Product Identifier**

Product name	10M29-1 Lithium (10,000µg/mL in 1% HNO3)
Synonyms	10,000μg/mL Lithium in 1% HNO3
Proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s (contains nitric acid)
Other means of identification	10M29-1

### Recommended use of the chemical and restrictions on use

### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	High-Purity Standards
Address	PO Box 41727 SC 29423 United States
Telephone	843-767-7900
Fax	843-767-7906
Website	highpuritystandards.com
Email	Not Available

### **Emergency phone number**

Association / Organisation	INFOTRAC
Emergency telephone numbers	1-800-535-5053
Other emergency telephone numbers	1-352-323-3500

### **SECTION 2 HAZARD(S) IDENTIFICATION**

### Classification of the substance or mixture

Classification

Metal Corrosion Category 1, Skin Corrosion/Irritation Category 1A, Serious Eye Damage Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation)

### Label elements

GHS label elements





SIGNAL WORD

DANGER

### Hazard statement(s)

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

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### Hazard(s) not otherwise specified

Not Applicable

### Precautionary statement(s) Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

### Precautionary statement(s) Response

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

### Precautionary statement(s) Storage

P405 Store locked up.

### Precautionary statement(s) Disposal

Dispose of contents/container in accordance with local regulations.

### **SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

### Substances

See section below for composition of Mixtures

### **Mixtures**

CAS No	%[weight]	Name
554-13-2	1 (as Li)	lithium carbonate
7697-37-2	1	nitric acid
7732-18-5	balance	water_

### **SECTION 4 FIRST-AID MEASURES**

### Description of first aid measures

Eye Contact	If this product comes in contact with the eyes:  Immediately hold eyelids apart and flush the eye continuously with running water.  Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.  Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.  Transport to hospital or doctor without delay.  Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs:  Immediately flush body and clothes with large amounts of water, using safety shower if available.  Quickly remove all contaminated clothing, including footwear.  Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.  Transport to hospital, or doctor.
Inhalation	<ul> <li>If furnes or combustion products are inhaled remove from contaminated area.</li> <li>Lay patient down. Keep warm and rested.</li> <li>Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>Transport to hospital, or doctor, without delay.</li> <li>Inhalation of vapours or aerosols (mists, furnes) may cause lung oedema.</li> <li>Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).</li> <li>As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.</li> <li>Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.</li> <li>This must definitely be left to a doctor or person authorised by him/her.</li> <li>(ICSC13719)</li> </ul>
	► For advice, contact a Poisons Information Centre or a doctor at once.

If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.

See Section 11

Most important symptoms and effects, both acute and delayed

Indication of any immediate medical attention and special treatment needed

Ingestion

For acute or short term repeated exposures to strong acids: Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.

Observe the patient carefully.

• Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling

Transport to hospital or doctor without delay.

Urgent hospital treatment is likely to be needed. If swallowed do NOT induce vomiting

- Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise
- For Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the dessicating action of the acid on proteins in specific tissues. INGESTION:

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- ▶ Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- ▶ DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
- Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- ▶ Charcoal has no place in acid management.
- ▶ Some authors suggest the use of lavage within 1 hour of ingestion.

### SKIN:

- Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- ▶ Deep second-degree burns may benefit from topical silver sulfadiazine

### FYF.

- Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjuctival cul-de-sacs. Irrigation should last at least 20-30 minutes. DO NOT use neutralising agents or any other additives. Several litres of saline are required.
- Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
- ▶ Steroid eye drops should only be administered with the approval of a consulting ophthalmologist)

[Ellenhorn and Barceloux: Medical Toxicology]

### **SECTION 5 FIRE-FIGHTING MEASURES**

### **Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

### Special hazards arising from the substrate or mixture

Fire Incompatibility

None known.

### Special protective equipment and precautions for fire-fighters

Fire Fighting
---------------

Fire/Explosion Hazard

Non combustible.

### **SECTION 6 ACCIDENTAL RELEASE MEASURES**

### Personal precautions, protective equipment and emergency procedures

See section 8

### **Environmental precautions**

See section 12

### Methods and material for containment and cleaning up

Minor Spills	<ul> <li>Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.</li> <li>Clean up all spills immediately.</li> </ul>
Major Spills	#

Personal Protective Equipment advice is contained in Section 8 of the SDS.

### **SECTION 7 HANDLING AND STORAGE**

### Precautions for safe handling

Safe handling	Avoid all personal contact, including inhalation.
Other information	► Store in original containers.

### Conditions for safe storage, including any incompatibilities

Suitable container	DO NOT use aluminium or galvanised containers     Check regularly for spills and leaks     Lined metal can, lined metal pail/ can.  For low viscosity materials     Drums and jerricans must be of the non-removable head type.
Storage incompatibility	► Inorganic acids are generally soluble in water with the release of hydrogen ions.

### **SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

# Control parameters

### OCCUPATIONAL EXPOSURE LIMITS (OEL)

### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Levels (PELs) - Table Z1			5 mg/m3 / 2 ppm	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	nitric acid	Nitric acid	2 ppm	4 ppm	Not Available	TLV® Basis: URT & eye irr; dental erosion

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US NIOSH Recommended Exposure Limits (RELs)	nitric acid	Aqua fortis, Engravers acid, Hydrogen nitrate, Red fuming nitric acid (RFNA), White fuming nitric acid (WFNA)		5 mg/n 2 ppm	mg/m3 / 10 mg/m3 / 4 ppm ppm		Not Available		Not Available	
EMERGENCY LIMITS										
Ingredient	Material name		TEEL-1	TEEL-2				TEEL-3		
lithium carbonate	Lithium carbonate		0.16 mg/m3 1		1.8 mg/m3		100 mg/m3			
nitric acid	Nitric acid		Not Available		Not Available			Not Available		
Ingredient	Original IDL	Original IDLH				Revised IDLH				
lithium carbonate	Not Available	Not Available			Not Available					
nitric acid	100 ppm			25 ppm						
water	Not Available				Not Available					

### **Exposure controls**

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard.
Personal protection	
Eye and face protection	<ul> <li>Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure.</li> </ul>
Skin protection	See Hand protection below
Hands/feet protection	<ul> <li>▶ Elbow length PVC gloves</li> <li>▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.</li> </ul>
Body protection	See Other protection below
Other protection	▶ Overalls.
Thermal hazards	Not Available

### Respiratory protection

Type A Filter of sufficient capacity.

### **SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

### Information on basic physical and chemical properties

Appearance	colorless		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	<2	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

# **SECTION 10 STABILITY AND REACTIVITY**

Reactivity	See section 7
Chemical stability	► Contact with alkaline material liberates heat
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7

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Incompatible materials	See section 7
Hazardous decomposition products	See section 5

# SECTION 11 TOXICOLOGICAL INFORMATION

SECTION 11 TOXICOLOG	SICAL INFORMATION			
Information on toxicologic	cal effects			
Inhaled	The material can cause respiratory irritation in some persons.  Corrosive acids can cause irritation of the respiratory tract, with coughing, choking The material has NOT been classified by EC Directives or other classification systematics.			
Ingestion	Ingestion of acidic corrosives may produce burns around and in the mouth, the thro: The material has <b>NOT</b> been classified by EC Directives or other classification syst			
Skin Contact	Skin contact with acidic corrosives may result in pain and burns; these may be deep Skin contact is not thought to have harmful health effects (as classified under EC D through wounds, lesions or abrasions.  Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may p	Directives); the	material may still	produce health damage following entry
Eye	If applied to the eyes, this material causes severe eye damage.  Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light a	and burns.		
Chronic	Repeated or prolonged exposure to acids may result in the erosion of teeth, swellin Long-term exposure to respiratory irritants may result in disease of the airways invo Substance accumulation, in the human body, may occur and may cause some conc	olving difficult l	breathing and rela	ated systemic problems.
10M29-1 Lithium	TOXICITY	RRITATION		
(10,000μg/mL in 1% HNO3)	Not Available N	ot Available		
	TOXICITY		IRRITATION	
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>		Eye (rabbit) : Mo	oderate *
lithium carbonate	Inhalation (rat) LC50: >0.8 mg/L/4h * <sup>[2]</sup>		Skin (rabbit) : M	
	Oral (rat) LD50: 525 mg/kg <sup>[2]</sup>			
	TOXICITY			IRRITATION
nitric acid	Inhalation (rat) LC50: 0.13 mg/L/4hr <sup>[2]</sup>			* DuPont
	Inhalation (rat) LC50: 2500 ppm/1h *t <sup>[2]</sup>			Nil reported
	TOXICITY		II.	RRITATION
water	Oral (rat) LD50: >90000 mg/kg <sup>[2]</sup>			lot Available
Legend:	Nalue obtained from Europe ECHA Registered Substances - Acute toxicity 2.* V.	'alue obtained	from manufacture	er's SDS. Unless otherwise specified data
	extracted from RTECS - Register of Toxic Effect of chemical Substances			
LITHIUM CARBONATE	Goitrogenic:. Lacrimation, altered sleep times, hallucinations, distorted perception, toxic psychos sytemic administration), foetoxicity and foetolethality and specific development abr			• • • • • • • • • • • • • • • • • • • •
NITRIC ACID	The material may produce severe irritation to the eye causing pronounced inflamma. The material may produce respiratory tract irritation, and result in damage to the lu. The material may cause severe skin irritation after prolonged or repeated exposure vesicles, scaling and thickening of the skin.  Oral (?) LD50: 50-500 mg/kg * [Various Manufacturers]	ıng including r		
WATER	No significant acute toxicological data identified in literature search.			
10M29-1 Lithium (10,000μg/mL in 1% HNO3) & LITHIUM CARBONATE & NITRIC ACID	Asthma-like symptoms may continue for months or even years after exposure to the	material cease	es.	
10M29-1 Lithium (10,000µg/mL in 1% HNO3) & NITRIC ACID	for acid mists, aerosols, vapours Data from assays for genotoxic activity in vitro suggest that eukaryotic cells are sus	sceptible to ger	netic damage who	en the pH falls to about 6.5.
Acute Toxicity	○ Card	cinogenicity	0	
Skin Irritation/Corrosion	Rep	roductivity	0	
Serious Eye Damage/Irritation	✓ STOT - Single	e Exposure	*	
Respiratory or Skin sensitisation	STOT - Repeated	d Exposure	0	
Mutagenicity	○ Aspirat	tion Hazard	0	

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Legena:

X − Data available but does not fill the criteria for classification
 ✓ − Data required to make classification available

Data Not Available to make classification

### **SECTION 12 ECOLOGICAL INFORMATION**

### **Toxicity**

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
lithium carbonate	LC50	96	Fish	5.69mg/L	2
lithium carbonate	EC50	48	Crustacea	6.24mg/L	2
lithium carbonate	EC50	72	Algae or other aquatic plants	>400mg/L	2
lithium carbonate	EC50	504	Crustacea	>1.7mg/L	2
lithium carbonate	NOEC	504	Crustacea	1.7mg/L	2
nitric acid	EC50	48	Crustacea	490mg/L	2
nitric acid	EC50	96	Crustacea	39mg/L	2
nitric acid	NOEC	2160	Fish	97.8mg/L	2
water	LC50	96	Fish	897.520mg/L	3
water	EC50	96	Algae or other aquatic plants	8768.874mg/L	3
water	EC50	384	Crustacea	199.179mg/L	3
Legend:	Aquatic Toxicity Data (E		gistered Substances - Ecotoxicological Inform se - Aquatic Toxicity Data 5. ECETOC Aquati ata 8. Vendor Data		

### Ecotoxicity:

The tolerance of water organisms towards pH margin and variation is diverse.

Prevent, by any means available, spillage from entering drains or water courses.

DO NOT discharge into sewer or waterways

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
lithium carbonate	LOW	LOW
water	LOW	LOW

### **Bioaccumulative potential**

Ingredient	Bioaccumulation
lithium carbonate	LOW (LogKOW = -0.4605)
water	LOW (LogKOW = -1.38)

### Mobility in soil

-	
Ingredient	Mobility
lithium carbonate	HIGH (KOC = 1)
water	LOW (KOC = 14.3)

# **SECTION 13 DISPOSAL CONSIDERATIONS**

### Waste treatment methods

Product / Packaging disposal

► Recycle wherever possible.

## **SECTION 14 TRANSPORT INFORMATION**

### **Labels Required**



**Marine Pollutant** 

Land transport (DOT)	
UN number	3264
UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s (contains nitric acid)
Transport hazard class(es)	Class 8

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	Subrisk Not Applicable
Packing group	
Environmental hazard	Not Applicable
Special precautions for user	Hazard Label 8 Special provisions B2, IB2, T11, TP2, TP27

### Air transport (ICAO-IATA / DGR)

UN number	3264		
UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. * (contains nitric acid)		
	ICAO/IATA Class	8	
Transport hazard class(es)	ICAO / IATA Subrisk	Not Applicable	
	ERG Code	8L	
Packing group	II		
Environmental hazard	Not Applicable		
	Special provisions		A3A803
	Cargo Only Packing I	nstructions	855
	Cargo Only Maximum	Qty / Pack	30 L
Special precautions for user	Passenger and Cargo	Packing Instructions	851
	Passenger and Cargo	Passenger and Cargo Maximum Qty / Pack	
	Passenger and Cargo Limited Quantity Packing Instructions		Y840
	Passenger and Cargo	Limited Maximum Qty / Pack	0.5 L

### Sea transport (IMDG-Code / GGVSee)

UN number	3264
UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (contains nitric acid)
Transport hazard class(es)	IMDG Class 8 IMDG Subrisk Not Applicable
Packing group	II .
Environmental hazard	Not Applicable
Special precautions for user	EMS Number F-A, S-B Special provisions 274 Limited Quantities 1 L

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

## **SECTION 15 REGULATORY INFORMATION**

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

LITHIUM CARBONATE(554-13-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US - California Proposition 65 - Reproductive Toxicity US EPCRA Section 313 Chemical List

US Priority List for the Development of Proposition 65 Safe Harbor Levels - No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

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International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants
•	
US - Alaska Limits for Air Contaminants	US - Washington Permissible exposure limits of air contaminants
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)	US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values
US - California Permissible Exposure Limits for Chemical Contaminants	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
US - Hawaii Air Contaminant Limits	US ACGIH Threshold Limit Values (TLV)
US - Idaho - Limits for Air Contaminants	US EPCRA Section 313 Chemical List
US - Michigan Exposure Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELs)
US - Minnesota Permissible Exposure Limits (PELs)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Oregon Permissible Exposure Limits (Z-1)	US SARA Section 302 Extremely Hazardous Substances
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	

# $\parallel$ WATER(7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

### **Federal Regulations**

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

### SECTION 311/312 HAZARD CATEGORIES

Immediate (acute) health hazard	Yes
Delayed (chronic) health hazard	No
Fire hazard	No
Pressure hazard	No
Reactivity hazard	No

### US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Nitric acid	1000	454

### State Regulations

### US. CALIFORNIA PROPOSITION 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

### US - CALIFORNIA PREPOSITION 65 - CARCINOGENS & REPRODUCTIVE TOXICITY (CRT): LISTED SUBSTANCE

Lithium carbonate Listed

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Υ
Canada - NDSL	N (lithium carbonate; water; nitric acid)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (water)
Korea - KECI	Y
New Zealand - NZIoC	Υ
Philippines - PICCS	Υ
USA - TSCA	Υ
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

## **SECTION 16 OTHER INFORMATION**

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment.

### **Definitions and abbreviations**

PC-TWA: Permissible Concentration-Time Weighted Average

PC-STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit。

IDLH: Immediately Dangerous to Life or Health Concentrations

OSF: Odour Safety Factor

NOAEL :No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level

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TLV: Threshold Limit Value LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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