

SAFETY DATA SHEET

Version: 3.0
Date of Issue: 7 March 2018
Revision date: 14 February 2018
Date of First Issue: 08 September 2015


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ACCORDING TO OSHA HCS (29 CFR 1910.1200)

SECTION 1: IDENTIFICATION

Product identifier used on the label	Gagekote 11
Other means of identification	Not applicable
Recommended use of the chemical and restrictions on use	
Recommended use	Metal surface treatment products, including galvanic and electroplating products.
Restrictions on use	Anything other than the above.
Details of the supplier of the safety data sheet	
Supplier	VISHAY MEASUREMENTS GROUP, INC.
Address of Supplier	Post Office Box 27777 Raleigh, NC 27611 USA
Telephone	+1 919-365-3800
Fax	+1 919-365-3945
E-Mail (competent person)	mm.us@vishaypg.com
Emergency telephone number	1-800-424-9300 CHEMTREC (24 hours)

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200	
Physical hazards	Flammable Liquid, Category 2
Health hazards	Aspiration Toxicity, Category 1 Skin Irritation, Category 2 Eye Irritation, Category 2 Specific target organ toxicity — single exposure, Category 3 Specific target organ toxicity — repeated exposure, Category 1 Reproductive toxicity, Category 2 Chronic aquatic toxicity, category 3
Environmental hazards	
Hazard Symbol	
Signal Word(s)	DANGER
Hazard Statement(s)	Highly flammable liquid and vapour. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. Causes damage to organs (Narcotic effects) (Inhalation). Suspected of damaging fertility or the unborn child. Causes damage to organs (Central nervous system, Liver, Kidneys) through prolonged or repeated exposure (Inhalation). Harmful to aquatic life with long lasting effects.
Precautionary Statement(s)	Keep away from heat and sources of ignition. No smoking Do not breathe mist/vapours/spray. Use only non-sparking tools.

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Wash hands and exposed skin thoroughly after handling.
 Wear protective gloves/protective clothing/eye protection/face protection.
 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
 Do NOT induce vomiting.
 IF ON SKIN: Wash with plenty of water.
 If skin irritation occurs, get medical advice/attention.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If eye irritation persists, get medical advice/attention.
 Call a POISON CENTER/doctor if you feel unwell.

Other hazards None known.

Percent of the mixture consists of ingredient(s) of unknown acute toxicity: 0%

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances Not applicable

Mixtures Substances in preparations / mixtures

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Toluene	< 50	108-88-3	203-625-9	Flammable Liquid, Category 2 Aspiration Toxicity, Category 1 Skin Irritation, Category 2 Specific target organ toxicity — single exposure, Category 3 Specific target organ toxicity — repeated exposure, Category 2 Reproductive toxicity, Category 2 Chronic aquatic toxicity, category 3
Propan-2-ol	< 10	67-63-0	200-661-7	Flammable Liquid, Category 2 Eye Irritation, Category 2 Specific target organ toxicity — single exposure, Category 3
Stoddard solvent*	< 10	8052-41-3	232-489-3	Aspiration Toxicity, Category 1 Specific target organ toxicity — repeated exposure, Category 1
Xylene	< 10	1330-20-7	215-535-7	Flammable Liquid, Category 2 Aspiration Toxicity, Category 1 Acute toxicity, Category 4 Acute toxicity, Category 4 Skin Irritation, Category 2 Eye Irritation, Category 2 Specific target organ toxicity — single exposure, Category 3 Specific target organ toxicity — repeated exposure, Category 2 Chronic aquatic toxicity, category 2
Zirconium 2-Ethylhexanoate	< 100	22464-99-9	245-018-1	Reproductive toxicity, Category 2

*Mixture: %W/W Benzene < 0.0001%

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SECTION 4: FIRST AID MEASURES



Description of first aid measures

Self-protection of the first aider

Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Avoid breathing vapours. Avoid contact with skin and eyes. Contaminated clothing should be laundered before reuse.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Apply artificial respiration if breathing has ceased or shows signs of failing. IF exposed or concerned: Get medical advice/attention.

Skin Contact

IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin irritation occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if eye irritation develops or persists.

Ingestion

IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. Drink two glasses of water. Do not give milk or alcoholic beverages. Do not give anything by mouth to an unconscious person. Immediately call a POISON CENTER/doctor.

Most important symptoms and effects, both acute and delayed

Coughing, Wheezing. May cause transient central nervous system (CNS) depression. Causes serious eye irritation. Causes skin irritation. May cause redness and swelling. Repeated exposure may cause skin dryness or cracking. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways. May damage the unborn child. May cause damage to organs through prolonged or repeated exposure.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically. If Gastric Lavage is performed: Endotracheal control and/or esophagoscopy is recommended.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

As appropriate for surrounding fire.

small scale: Extinguish preferably with dry chemical, sand or carbon dioxide.

large scale: Water spray, Water fog or dry powder.

Do not use water jet. Direct water jet may spread the fire.

Unsuitable extinguishing Media

Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. May form explosive mixture with air particularly in enclosed spaces. Do not allow to enter drains, sewers or watercourses. Will float and can be reignited on surface water. May decompose in a fire giving off toxic fumes. Hazardous decomposition product(s): Aldehydes, Acids Phenolics, Carbon monoxide, Carbon dioxide. Dense smoke is emitted when burned without sufficient oxygen.

Special protective equipment and precautions for fire fighters

Fight fire with normal precautions from a reasonable distance. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Wear positive pressure air supplied respirator if required by safe entry procedures. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Use non-sparking equipment when picking up flammable spill. Danger of flashback. Do not breathe fumes. Keep containers cool by spraying with water if exposed to fire. Avoid release to the environment.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Caution - spillages may be slippery. Ensure adequate ventilation. Eliminate sources of ignition. Stop leak if safe to do so. Use personal protective equipment as required. See Section: 8. Avoid breathing vapours. Avoid contact with skin and eyes. Keep upwind. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback.

Environmental precautions

Avoid release to the environment. Do not release undiluted and unneutralised to the sewer. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.

Methods and material for containment and cleaning up

Use non-sparking equipment when picking up flammable spill. Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a container for disposal. Ventilate the area and wash spill site after material pick-up is complete. Dispose of this material and its container as hazardous waste.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Ensure adequate ventilation. Do not breathe vapour. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. See Section: 8. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Do not use sparking tools. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.

Conditions for safe storage, including any incompatibilities

Ground/bond container and receiving equipment. Store in a well-ventilated place. Keep container tightly closed. Keep only in original container. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Vapor space above stored liquid may be flammable/explosive unless blanketed with inert gas. Keep away from direct sunlight. Opened containers should be carefully resealed and stored in an upright position.

Storage temperature
Incompatible materials

Shelf Life: Minimum of 1 year @ +75°F / 24°C
Keep away from: Acids, Alkalis and Strong oxidising agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Toluene	108-88-3	100	375	150 [^]	560 [^]	NIOSH
		200	-	300	-	OSHA
		20	-	-	-	ACGIH, R
Propan-2-ol	67-63-0	400	980	500 [^]	1225 [^]	NIOSH
		400	980	-	-	OSHA
		200	-	400	-	ACGIH
Stoddard solvent	8052-41-3	-	350	-	1800 [†]	NIOSH*
		500	-	2900	-	OSHA*
		-	290	-	580	ACGIH
Xylene, o-, m-, p- or mixed isomers	1330-20-7	100	435	150 [^]	655 [^]	NIOSH
		100	435	-	-	OSHA
		100	-	150	-	ACGIH

Note: OSHA PELs 1910.1000 TABLE Z-1 / NIOSH RELs / ACGIH TLVs

[^]NIOSH average value of 15 minutes. [†]NIOSH ceiling limit value of 15 minutes. *Based on white spirit, max 20% aromates. R: Substance has an adverse reproductive effect. The other components listed in Section 3 do not have occupational exposure limits.

Biological Exposure Indices

Not established.

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Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Have available eyewash bottle with clean water.

Individual protection measures, such as personal protective equipment (PPE)

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier. General hygiene measures for the handling of chemicals are applicable. Avoid contact with skin, eyes or clothing. Do not breathe vapour. Wash hands before breaks and after work. Keep work clothes separately. Contaminated clothing should be thoroughly cleaned. Do not eat, drink or smoke at the work place.

Eye/face protection



Wear protective eye glasses for protection against liquid splashes. Wear eye protection with side protection.

Skin protection



Hand protection: Wear impervious gloves. Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

Body protection: Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection



Ensure adequate ventilation. In case of inadequate ventilation wear respiratory protection. Long Term Exposure: A self contained breathing apparatus may be appropriate.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Clear/cloudy Liquid
Odor	Aromatic.
Odor Threshold	Not available.
pH	Not established.
Melting Point/Freezing Point	Not established.
Initial boiling point and boiling range	110 - 140°C
Flash Point	10°C
Evaporation rate (Butyl acetate = 1)	Not available.
Flammability (solid, gas)	Not applicable - Liquid
Upper/lower flammability or explosive limits	Flammable Limits (Lower) (%v/v): 1.2 Flammable Limits (Upper) (%v/v): Not available.
Vapour pressure	22 mmHg @ 20°C
Vapour density	Not available.
Relative density	Not available.
Solubility(ies)	Solubility (Water): Negligible
Partition coefficient: n-octanol/water	Not available.
Auto-ignition temperature	Not available.
Decomposition Temperature	535°C
Viscosity	Not available.

Other information

Organic solvents: 30 - 50 (%)

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SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Highly flammable liquid and vapour. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. May form explosive mixture with air particularly in enclosed spaces. May decompose in a fire giving off toxic fumes.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from direct sunlight.
Incompatible materials	Keep away from: Acids, Alkalis and Strong oxidising agents.
Hazardous decomposition product(s)	Aldehydes, Acids Phenolics, Carbon monoxide, Carbon dioxide. Dense smoke is emitted when burned without sufficient oxygen.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects (Substances in preparations / mixtures)	
Acute toxicity - Ingestion	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Acute toxicity - Inhalation	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 20.0 mg/l.
Acute toxicity - Skin Contact	Based upon the available data, the classification criteria are not met. Acute Toxicity Estimate Mixture Calculation: Estimated LC50 > 2000 mg/kg bw/day.
Skin corrosion/irritation	Causes skin irritation.
Toluene	Irritating to skin. (rabbit) (EU Method B.4)
Xylene	No data
Serious eye damage/irritation	Causes serious eye irritation.
Propan-2-ol	Irritating to eyes. (rabbit) (OECD 405)
Xylene	No data
Respiratory or skin sensitization	Based upon the available data, the classification criteria are not met.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
Carcinogenicity	Based upon the available data, the classification criteria are not met.
Reproductive toxicity	May damage the unborn child.
Toluene	NOAEC 600 ppm (Ono A et al, 1996)
Xylene	No data
Zirconium 2-Ethylhexanoate	NOAEL 300 mg/kg bw/day (Pennanen S et al, 1993)
STOT - single exposure	May cause drowsiness or dizziness.
Toluene	Narcotic effects – Rats (OECD 403)
Propan-2-ol	Narcotic effects – Rats (OECD 403)
Xylene	No data
STOT - repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Toluene	NOAEL 625 mg/kg bw/day (EU Method B.26)
Stoddard solvent	No data
Xylene	No data
Aspiration hazard	May be fatal if swallowed and enters airways.
Toluene	Kinematic Viscosity 0.59 mm ² /S
Stoddard solvent	Kinematic Viscosity: >= 0.9 - <= 1.6 mm ² /s
Xylene	No data
Information on likely routes of exposure	
Inhalation	Possible – accidental exposure
Ingestion	Unlikely – accidental exposure
Skin Contact	Possible – accidental exposure
Eye Contact	Possible – accidental exposure

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Early onset symptoms related to exposure

Causes serious eye irritation. Causes skin irritation. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways.

Delayed health effects from exposure

May damage the unborn child. May cause damage to organs through prolonged or repeated exposure. Target organ(s): Central nervous system, Liver, Kidneys.

Other information

NTP Report on Carcinogens
IARC Monographs

No components of the mixture are listed
Toluene - Group 3: Not classifiable as to its carcinogenicity to humans.
Propan-2-ol - Group 3: Not classifiable as to its carcinogenicity to humans.
Xylene - Group 3: Not classifiable as to its carcinogenicity to humans.

OSHA Designated Carcinogen

No components of the mixture are listed

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Chronic 3: Harmful to aquatic life with long lasting effects.

Toluene

Estimated Mixture LC50 >10 ≤ 100 mg/l (Fish)

Xylene

Acute toxicity: LC50 (fish) mg/l 5.5 (96 hour) (Moles et al., 1981)
Chronic Toxicity: NOEC (Fish) mg/l 1.4 (40 Day) (Moles et al., 1981)

Acute toxicity: No data

Persistence and degradability

Part of the components are poorly biodegradable.

Bioaccumulative potential

The product has low potential for bioaccumulation.

Mobility in soil

The product is predicted to have low mobility in soil. The product is essentially insoluble in water.

Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Do not release undiluted and unneutralised to the sewer. This material and its container must be disposed of as hazardous waste. Dispose of wastes in an approved waste disposal facility. Containers of this material may be hazardous when empty since they retain product residue.

SECTION 14: TRANSPORT INFORMATION

	ADR/RID	IMDG	IATA
UN number	UN 1133	UN 1133	UN 1133
UN proper shipping name	FLAMMABLE LIQUIDS N.O.S. (Toluene and Propan-2-ol)	FLAMMABLE LIQUIDS N.O.S. (Toluene and Propan-2-ol)	FLAMMABLE LIQUIDS N.O.S. (Toluene and Propan-2-ol)
Transport hazard class(es)	3	3	3
Packing group	II	II	II
Environmental hazards	Not classified as a Marine Pollutant. / Environmentally hazardous substance	Not classified as a Marine Pollutant. / Environmentally hazardous substance	Not classified as a Marine Pollutant. / Environmentally hazardous substance
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable		
Special precautions for user	See Section: 2		

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SECTION 15: REGULATORY INFORMATION

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

US Federal Regulations

TSCA Chemical Data Reporting (CDR) Rule	Toluene – Subject to 25,000lb reporting threshold Propan-2-ol - Subject to 25,000lb reporting threshold Zirconium 2-Ethylhexanoate - Subject to 25,000lb reporting threshold No components of the mixture are listed
EPCRA/SARA Section 302 Extremely Hazardous Substances	
EPCRA Section 313 Toxics Release Inventory (TRI) Program	Toluene – De minimis limit: 1% Propan-2-ol - De minimis limit: 1% Xylene – De minimis limit: 1%
NIOSH Occupational Carcinogen List	No components of the mixture are listed
OSHA List of highly hazardous chemicals, toxics and reactives	No components of the mixture are listed
NTP Report on Carcinogens (RoC) List	No components of the mixture are listed
Poison Prevention Packaging Act	Toluene – Substance requiring special packaging: Solvents for paint or other similar surface-coating material Stoddard solvent - Substance requiring special packaging: Solvents for paint or other similar surface-coating material Xylene – Substance requiring special packaging: Solvents for paint or other similar surface-coating material

US State Regulations

California State, Proposition 65 List	Toluene – Safe harbour level – MADL: 7,000 ug/day
California State, Safer Consumer Products Regulations	Toluene – Initial Candidate Chemicals List Propan-2-ol - Candidate Chemicals List Stoddard solvent - Initial Candidate Chemicals List Xylene – Initial Candidate Chemicals List
Maine State, Toxic Chemicals in Children's Products Act	Toluene – COC List and CHC List.
New Jersey State Worker and Community RTK Act	Toluene – RTKHSK and SHHSL. Propan-2-ol – RTKHSK and SHHSL. Stoddard solvent – RTKHSK. Xylene – RTKHSK and SHHSL.
Pennsylvania State, Worker and Community RTK Act	Toluene – Hazardous Substance List and Environmental Hazard List Propan-2-ol - Hazardous Substance List and Environmental Hazard List Stoddard solvent - Hazardous Substance List Xylene – Hazardous Substance List and Environmental Hazard List
Rhode Island State, Hazardous Substances RTK Act	Toluene – Hazardous Substance List Propan-2-ol - Hazardous Substance List Stoddard solvent - Hazardous Substance List Xylene – Hazardous Substance List

Non-Regional

IARC Monographs, List of Classifications	Toluene - Group 3: Not classifiable as to its carcinogenicity to humans. Propan-2-ol - Group 3: Not classifiable as to its carcinogenicity to humans. Xylene - Group 3: Not classifiable as to its carcinogenicity to humans.
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SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: New SDS Regulation compliant with HazCom 2012 format, all sections have been updated to include new information. Please review SDS with care.

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References:

Existing Safety Data Sheet (SDS)
EU Data: Existing ECHA registration(s) for Toluene (CAS No. 108-88-3), Propan-2-ol (CAS No. 67-63-0), Xylene (CAS No. 1330-20-7), Zirconium 2-

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Ethylhexanoate (CAS No. 22464-99-9) and Harmonised Classification(s) for Toluene (CAS No. 108-88-3), Propan-2-ol (CAS No. 67-63-0), Stoddard solvent (CAS No. 8052-41-3), Xylene (CAS No. 1330-20-7).

Literature References:

1. Ono A, Sekita K, Ogawa Y, Hirose A, Suzuki S, Saito M, Naito K, Kaneko T, Furuya T, Kawashima K, Yasuhara K, Matsumoto K, Tanaka S, Inoue T and Kurokawa Y, 1996, Reproductive and developmental toxicity studies of toluene II. Effects of inhalation exposure on fertility in rats, Journal of Environmental Pathology Toxicology and Oncology 15, 9-20
2. Pennanen, S. et al. 1993. Effects of 2-Ethylhexanoic acid on reproduction and postnatal development in Wistar rats. Fundamental and Applied Toxicology 21, 204-212.
3. Moles A, Bates S, Rice SD, Korn S. 1981. Reduced growth of Coho salmon fry exposed to two petroleum components, Toluene and naphthalene in fresh water. Transactions A. Fish. Soc. 110, 430-436.

GHS Classification of the substance or mixture	Classification Procedure
Flammable Liquid, Category 2	Flash Point [Closed cup]/ Boiling Point (°C)
Aspiration Toxicity, Category 1	Concentration of substance in product / Expert Judgement in the absence of test data
Skin Irritation, Category 2	Threshold Calculation
Eye Irritation, Category 2	Threshold Calculation
Specific target organ toxicity — single exposure, Category 3	Threshold Calculation
Specific target organ toxicity — repeated exposure, Category 1	Threshold Calculation
Reproductive toxicity, Category 2	Threshold Calculation
Chronic aquatic toxicity, category 3	Summation Calculation

LEGEND

ACGIH: American Conference of Governmental Industrial Hygienists
BEI: Biological Exposure Indices (ACGIH)
IARC: International Agency for Research on Cancer
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: The Occupational Safety & Health Administration
PBT: Persistent, Bioaccumulative and Toxic
PEL: Permissible exposure limit

REL: Recommended exposure limit
SCL: Specific Concentration Limit
STEL: Short Term Exposure Limit
TLV: Threshold Limit value
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
URT: Upper respiratory tract
vPvB: very Persistent and very Bioaccumulative

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

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