Technical Data Sheet [TDS]

AAT-420 Premium Vinyl Plank and LVT Adhesive

AAT-420 Premium Vinyl Plank and LVT Adhesive is a uniquely formulated adhesive engineered specifically for installing solid vinyl plank and tile (LVT). It may also be used to install solid vinyl sheet flooring and rubber tile (up to 24" x 24"). AAT-420 is moisture and alkali resistant and forms a tenacious, permanent bond. AAT-420 can be used on all grade levels over concrete and approved wood sub-floors in the absence of excessive moisture and alkalinity. AAT-420 may also be used over certain nonporous sub-floors.

Our premium vinyl plank and tile adhesive, AAT-420, is a nonhazardous, VOC compliant adhesive with zero VOC's (calculated). AAT-420 is freeze-thaw stable. Like all of our adhesives, AAT-420 is protected by the Biotrend® two-stage antimicrobial. Biotrend® is a specifically formulated broad-spectrum, anti-microbial agent that protects our adhesives and sealers from microorganisms, such as mold or mildew, in both the wet and dry states. AAT-420 contributes to several LEED NC and EC credits in the following categories:

- IEQ Credit 4.1—Low Emitting Materials – Adhesives & Sealants
- IEQ Credit 4.3—Low Emitting Materials – Flooring Systems
- IEQ Credit 5—Regional Materials

Prior to the start of the installation the installer must determine that the job-site conditions meet or exceed all applicable standards of the flooring manufacturer and AAT. Installation of flooring should be one of the last jobs of any construction project. The sub-floor should be prepared according to the standards and practices set forth in the most recent version of the document ASTM F-710. The AAT-420 adhesive is fully warranted and its performance is guaranteed.

Site Conditions:

- Recommended Sub-floors: ■ Concrete above, on or below grade ■ APA rated plywood underlayment ■ Properly prepared gypsum cement ■ Existing non-cushion back resilient floors that are well bonded, sound, smooth, and free of waxes, finishes, cleaners and any other bond inhibiting substances.

The building should be completely enclosed. All outside doors and windows should be properly installed with latching mechanisms in place.

Landscaping should be sufficiently completed to direct water away from the building. Gutters and downspouts should be in place.

All concrete, masonry, plastering, drywall and other wet work should be completed and thoroughly dry prior to beginning the installation. Texturing and paint primer coats should be completed.

Basements and crawl spaces should be dry and adequately ventilated. Sub-floors must be checked for moisture content and emissions using industry accepted methods. Crawl spaces should meet local building codes regarding minimum heights, cross ventilation and the use of vapor retarders.

Sub-floors must be free from dust, dirt, grease, wax, curing agents, sealers, oil and any other bond inhibiting substances. The sub-floor should be flat within 3/16" in 10' or 1/8" in 6'. Sub-floors must have a pH of 7.0-10.0.

Prior to the application of AAT-420, sub-floors must be tested in strict accordance to the most recent versions of ASTM F-1869 and F-2170. Both testing protocols must be performed in order to provide the most accurate view of the sub-floor's condition. Sub-floors of lightweight concrete must be tested in strict accordance to the most recent version of ASTM F-2170. The placement of calcium chloride kits and humidity probes must follow the ASTM standards for proper locations and the correct quantity of test sites. These and other tests may be performed by AAT in the event of a warranty claim.

Sub-floors on and below grade must be protected from ground moisture with a functioning and intact Class A vapor retarder that conforms to the requirements of the most current version of ASTM E-1745. This vapor retarder must be directly beneath, and in contact with, the slab. Concrete must be dry with moisture emission rates not exceeding 10 lbs./1000 sq ft/24 hrs, as measured by the Anhydrous Calcium Chloride Test, ASTM F-1869. Lightweight concrete and gypsum cement can only be tested according to the requirements of ASTM F-2170. For gypsum cement, densified and lightweight concrete the *in situ* relative humidity should not exceed 95%[2]. Before any moisture testing begins, the slab must be cured for a minimum of 30 days and the HVAC system must be operating for a minimum of 72 hours. Fill low areas with an appropriate leveling or patching compound. Leveling and patching compounds must be tested to ensure they are properly cured and within the manufacturer's specified requirements before proceeding with the installation. Mechanical surface profiling is the preferred sub-floor preparation method. Mechanically profile the sub-floor to a rough-grit sandpaper texture. Sanding or scouring with open paper or a titanium disk is preferred. All curing agents [topical and admix], adhesives, paints, varnishes, oils, waxes, dust, dirt and any other bond inhibiting substances must be removed. The removal of bond inhibiting substances must be by mechanical means: sanding, shot or bead blasting. AAT-420 cannot be used if adhesive removers, solvent or chemical cleaners have been used. Lightweight concrete and gypsum cement must be primed with AAT-570 Acrylic Primer before applying the adhesive. Sanded and other very porous substrates must also be primed with AAT-570 Acrylic Primer. Do NOT use AAT-420 over AdvanTech® sub-floor panels.

Strip or plank wood flooring, particleboard and OSB sub-floors should be covered with an approved underlayment (minimum thickness of ¼"). For assistance with specific sub-floors and floorings please contact our Technical Services Department. AAT-420 cannot be used if adhesive removers, solvent or chemical cleaners have been used. Regulations may require that existing flooring material or coatings be tested to determine the asbestos content. Refer to the instructions for removal and handling of resilient flooring published by the RFCI in the publication, Recommended Work Practices for Removal of Resilient Floor Coverings. The Resilient Floor Covering Institute may be reached thru their Website www.rfci.org or by calling 301-340-8580. For a copy of the Limited Warranty please contact Customer Service.

Slabs with a radiant heating system are acceptable sub-floors with the following stipulations. The heating system should be fully operational for a minimum of seven days prior to the installation. The system should be shut down to allow the slab to cool down to room temperature before applying the adhesive. Immediately after completing the installation turn the system back on and set to normal temperature. The sub-floor cannot exceed 85°F throughout the life of the installation. Check with the system manufacturer to determine that the system is designed for the desired R-rating for wood flooring. Failure to ensure proper system design can result in excessive heat damage and dimensional change to the flooring

Typical Trowel and approximate coverage (depth x width x spacing):

1/32" x 1/16" x 1/32" – up to 250 sq.ft./gal.

Installation Recommendations: The building should be completely enclosed. All outside doors and windows should be properly installed with latching mechanisms in place. Adequate ventilation should be available. The HVAC system for the building should be operational and provide a consistent temperature of 65-85°F (air and sub-floor) and humidity levels should be between 35-65% for a minimum of 72 hours prior to the installation. These conditions must be maintained to ensure the long term success and performance of the installation.

1. Flooring and adhesive should be acclimated to the job site conditions for a minimum of 24 hours prior to the installation.
2. Be familiar with the recommendations and any special instructions from the flooring manufacturer before beginning the installation. Follow the flooring manufacturer's specific recommendations regarding seam sealing.
3. Refer to the information above for specific information regarding sub-floor preparation and site conditions.
4. When installing vinyl plank and tile (LVT) spread the adhesive with the appropriate trowel and allow the adhesive to dry to a clear, tacky state. Place the LVT or plank into the dry, pressure sensitive adhesive. Only spread as much adhesive as can be covered with the flooring in under six hours.[1]

5. For use with solid vinyl sheet flooring[2], spread the adhesive with the appropriate trowel and allow it to develop tack. DO NOT allow the adhesive to "skin-over" or dry. Place the flooring into the "wet-tacky" adhesive while the adhesive is still wet enough to transfer to the back of the flooring.
6. Roll the installed flooring with a 75-100lb, three-section roller. Rolling should take place immediately after the flooring is placed into the adhesive.
7. It is recommended to minimize traffic over the newly installed flooring for at least 24 hours after the installation has been completed. Do not wash or clean the floor for five days after completion of the installation. To replace furniture and appliances use plywood panels to protect the flooring.

Specific Technical Data:

A. Base: Acrylic-Ester Emulsion
B. Color: light tan
C. Clean-up: Remove wet adhesive with water and mild soap solution. Use AAT-197 Adhesive Remover to remove dried adhesive. Dried adhesive may be more difficult to remove; therefore, take care to remove adhesive from the surface of the flooring before it dries. DO NOT apply the solvent directly to the flooring material.
D. Packaging: 4 gallon pails and one gallon pails (4 per case)
E. Shelf-Life: One year from date of manufacture in un-opened container when stored at 70°F.
F. Freeze-Thaw Stable to 15°F. Stability and spread-ability can be affected if allowed to freeze. Frozen material should be allowed to thaw at room temperature. DO NOT agitate or stir while frozen.
G. VOCs: 0 g/l (Calculated per Ca. Rule 1168)
H. Not recommended for exterior installations.

NOTE: We recommend installers follow the guidelines set forth in the flooring manufacturer's specific recommendations. Before placing the flooring, the adhesive must be allowed an open or dwell time appropriate for the flooring product, jobsite and sub-floor conditions.

[1]AAT-420 has an extended working time of up to six hours after the initial drying if the area is kept dust free. It is extremely important to maintain recommended notch depth, width and spacing. The proper notch depth is that which will produce adhesive ridges that affect a 100% transfer to both the substrate and the backing of the flooring to include the inner recesses of the texture of the back.

[2] When installing sheet vinyl the maximum MVER is 6lbs and the maximum *in situ* RH is 85%.

Before beginning installations with flooring types or over sub-floors not listed contact AAT Technical Services for recommendations. While some Lauan plywood panels are widely marketed as "underlayments", there are a variety of qualities and species sold as such. Some varieties present severe problems when used as underlayments. Frequent problems noted are discoloration, indentation, bond failure, and underlayment delamination. AAT will not warrant the adhesive when applied over Lauan plywood. AAT-420 cannot be used if adhesive removers, solvent or chemical cleaners have been used.

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/10/2025 Reviewed on 03/10/2025

1 Identification

· **Product identifier**

· **Trade name: AAT-420**

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Advanced Adhesive Technologies, LLC.
424 S Spencer St
Dalton, GA 30721
Tel: 800-228-4583
Fax: 706-278-6207
· **Emergency telephone number:** CHEMTREC (800) 424-9300

2 Hazard(s) identification

· **Classification of the substance or mixture**


GHS08 Health hazard

Carcinogenicity 2 H351 Suspected of causing cancer.


GHS07

Sensitization - Skin 1 H317 May cause an allergic skin reaction.

· **Label elements**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**


GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**
ethyl acrylate
· **Hazard statements**
May cause an allergic skin reaction.
Suspected of causing cancer.
· **Precautionary statements**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of water.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Store locked up.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/10/2025 Reviewed on 03/10/2025

Trade name: AAT-420

(Contd. of page 1)

Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**
Health = 1
Fire = 0
Reactivity = 0
· **HMIS-ratings (scale 0 - 4)**
Health = 1
Fire = 0
Reactivity = 0
· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
140-88-5	ethyl acrylate	1.133%

4 First-aid measures

· **Description of first aid measures**
· **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **After swallowing:** If symptoms persist consult doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/10/2025 Reviewed on 03/10/2025

Trade name: AAT-420

(Contd. of page 2)

· **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 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.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
140-88-5	ethyl acrylate	8.3 ppm
57-13-6	urea	30 mg/m³

· **PAC-2:**		
140-88-5	ethyl acrylate	36 ppm
57-13-6	urea	280 mg/m³

· **PAC-3:**		
140-88-5	ethyl acrylate	240 ppm
57-13-6	urea	1,700 mg/m³

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**
· **Storage:**
· **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.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
140-88-5 ethyl acrylate	
PEL	Long-term value: 100 mg/m³, 25 ppm Skin

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/10/2025 Reviewed on 03/10/2025

Trade name: AAT-420

(Contd. of page 3)

REL	See Pocket Guide App. A
TLV	Short-term value: 15 ppm Long-term value: 5 ppm A4

· **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.
· **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:**

Protective 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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **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:** Goggles recommended during refilling.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Fluid
Color:	According to product specification
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	100 °C (212 °F)

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/10/2025 Reviewed on 03/10/2025

Trade name: AAT-420

(Contd. of page 4)

· **Flash point:**	Not applicable.
· **Flammability:**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure at 20 °C (68 °F):**	23 hPa (17.3 mm Hg)
· **Density:**	Not determined.
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Water:	13.6 %
VOC content:	0.00 % 0.0 g/l / 0.00 lb/gal
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information 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 further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/10/2025 Reviewed on 03/10/2025

Trade name: AAT-420

(Contd. of page 5)

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
ATE (Acute Toxicity Estimate)		
Oral	LD50	70,609 mg/kg (rat)
Dermal	LD50	161,871 mg/kg (rabbit)
Inhalative	LC50/4 h	192,410 mg/l (rat)

140-88-5 ethyl acrylate		
Oral	LD50	800 mg/kg (rat)
Dermal	LD50	1,834 mg/kg (rabbit)
Inhalative	LC50/4 h	2,180 mg/l (rat)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** Sensitization possible through skin contact.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
140-88-5	ethyl acrylate	2B

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/10/2025 Reviewed on 03/10/2025

Trade name: AAT-420

(Contd. of page 6)

· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **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, ADN, IMDG, IATA**	not regulated
· **UN proper shipping name** · **DOT, ADN, IMDG, IATA**	not regulated
· **Transport hazard class(es)** · **DOT, ADN, IMDG, IATA** · **Class**	not regulated
· **Packing group** · **DOT, IMDG, IATA**	not regulated
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	not regulated

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

· **TSCA (Toxic Substances Control Act):**		
7732-18-5	water, distilled, conductivity or of similar purity	ACTIVE
140-88-5	ethyl acrylate	ACTIVE
9003-04-7	2-propenoic acid, homopolymer, sodium salt	ACTIVE
57-13-6	urea	ACTIVE
2634-33-5	1,2-benzisothiazol-3(2H)-one	ACTIVE

· **Hazardous Air Pollutants**	
140-88-5	ethyl acrylate

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/10/2025 Reviewed on 03/10/2025

Trade name: AAT-420

(Contd. of page 7)

· **Proposition 65**

· **Chemicals known to cause cancer:**	
140-88-5	ethyl acrylate

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**		
57-13-6	urea	II

· **TLV (Threshold Limit Value)**		
140-88-5	ethyl acrylate	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**	
140-88-5	ethyl acrylate

· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**
ethyl acrylate
· **Hazard statements**
May cause an allergic skin reaction.
Suspected of causing cancer.
· **Precautionary statements**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of water.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Printing date 03/10/2025 Reviewed on 03/10/2025

Trade name: AAT-420

(Contd. of page 8)

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.

· **Department issuing SDS:** Technical Department
· **Contact:** Technical Director
· **Abbreviations and acronyms:**
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
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Sensitization - Skin 1: Skin sensitisation – Category 1
Carcinogenicity 2: Carcinogenicity – Category 2