

1. Identification of the substance/mixture and of the company/undertaking

Product Name: Nano-Clear VV-200 Adhesion Promoter

Product Code: VV-200

Intended use Professional use only

Nanovere Technologies, LLC.
4023 S. Old US 23, Suite 101
Brighton, MI 48114 USA

Telephone Product information (810) 227-0077
Medical emergency (800) 424-9300 (CHEMTREC)

2. Hazards identification

This preparation is hazardous per the following GHS criteria

GHS-Classification

Flam. Liq. 2	H225 -	Highly flammable liquid and vapor
Acute Tox. 4 (Inhalation)	H332 -	Harmful if inhaled
STOT SE 3	H336 -	May cause drowsiness or dizziness
STOT SE 3	H335 -	May cause respiratory irritation
Aquatic Acute 3	H402 -	Harmful to aquatic life

GHS-Labeling

Hazard symbols



Hazard statements

Flammable liquid and vapour.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Causes serious eye damage.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Obtain special instructions before use.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Do not breathe dust or mist.

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Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
Immediately call a POISON CENTER/doctor.
Specific treatment (see supplemental first aid instructions on this label).
If skin irritation or rash occurs: Get medical advice/ attention.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local regulations.

Other hazards which do not result in classification

Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity:

0 %

3. Composition/information on ingredients

Mixture of polymer and solvent

Components

CAS-No.	Chemical name	Concentration
540-88-5	tert-Butyl acetate	80 - 90%
Proprietary	Hybrid Polymer	10 - 20%

4. First aid measures

Eye contact

Remove contact lenses. Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. Seek medical advice.

Skin contact

Do NOT use solvents or thinners. Take off all contaminated clothing immediately. Wash skin thoroughly with soap and water or use recognized skin cleanser. If skin irritation persists, call a physician.

Inhalation

Avoid inhalation of vapour or mist. Move to fresh air in case of accidental inhalation of vapours. If breathing is irregular or stopped, administer artificial respiration. If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.

Ingestion

If swallowed, seek medical advice immediately and show this safety data sheet (SDS) or product label. Do NOT induce vomiting. Keep at rest.

Most Important Symptoms/effects, acute and delayed

Inhalation

May cause nose and throat irritation. May cause nervous system depression characterized by the following progressive steps: headache, dizziness, nausea, staggering gait, confusion, unconsciousness. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

Ingestion

May result in gastrointestinal distress.

Skin or eye contact

May cause irritation or burning of the eyes. Repeated or prolonged liquid contact may cause skin irritation with discomfort and dermatitis.

Indication of Immediate medical attention and special treatment needed if necessary

No data available on the product. See section 3 and 11 for hazardous ingredients found in the product.

5. Firefighting measures

Suitable extinguishing media

Universal aqueous film-forming foam, Carbon dioxide (CO₂), Dry chemical

Extinguishing media which shall not be used for safety reasons

High volume water jet

Hazardous combustion products

CO, CO₂, smoke, and oxides of any heavy metals that are reported in "Composition, Information on Ingredients" section.

Fire and Explosion Hazards

Flammable liquid. Vapor/air mixture will burn when an ignition source is present.

Special Protective Equipment and Fire Fighting Procedures

Full protective flameproof clothing should be worn as appropriate. Wear self-contained breathing apparatus for firefighting if necessary. In the event of fire, cool tanks with water spray. Do not allow run-off from fire fighting to enter public sewer systems or public waterways.



6. Accidental release measures

Procedures for cleaning up spills or leaks

Ventilate area. Remove sources of ignition. Prevent skin and eye contact and breathing of vapor. Wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C), eye protection, gloves and protective clothing. Pour liquid decontamination solution over the spill and allow to sit at least 10 minutes. Wear a properly fitted air-purifying respirator with organic vapor cartridges (NIOSH approved TC-23C), eye protection, gloves and protective clothing. Confine, remove with inert absorbent, and dispose of properly.

Environmental precautions

Do not let product enter drains. Notify the respective authorities in accordance with local law in the case of contamination of rivers, lakes or waste water systems.

7. Handling and storage

Precautions for safe handling

Observe label precautions. Keep away from heat, sparks, flame, static discharge and other sources of ignition. VAPORS MAY CAUSE FLASH FIRE. Close container after each use. Ground containers when pouring. Do not transfer contents to bottles or unlabeled containers. Wash thoroughly after handling and before eating or smoking. Do not store above 49 °C (120 °F). If material is a coating: do not sand, flame cut, braze or weld dry coating without a NIOSH approved air purifying respirator with particulate filters or appropriate ventilation, and gloves.

Advice on protection against fire and explosion

Solvent vapours are heavier than air and may spread along floors. Vapors may form explosive mixtures with air and will burn when an ignition source is present. Always keep in containers of same material as the original one. Never use pressure to empty container: container is not a pressure vessel. The accumulation of contaminated rags may result in spontaneous combustion. Good housekeeping standards and regular safe removal of waste materials will minimize the risks of spontaneous combustion and other fire hazards.

Storage

Requirements for storage areas and containers

Observe label precautions. Store in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. No smoking. Prevent unauthorized access. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Advice on common storage

Store separately from oxidizing agents and strongly alkaline and strongly acidic materials.

OSHA/NFPA Storage Classification: IC

8. Exposure controls/personal protection

Engineering controls and work practices

Provide adequate ventilation. This should be achieved by a good general extraction and -if practically feasible- by the use of a local exhaust ventilation. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

National occupational exposure limits



CAS-No.	Chemical name	Source	Time	Type	Value	Note
540-88-5	tert-Butyl acetate	ACGIH	15 min	STEL	200 ppm	
		ACGIH	8 hr	TWA	150 ppm	
		OSHA	8 hr	TWA	150 ppm	

Glossary

CEIL Ceiling exposure limit
STEL Short term exposure limit
TL Threshold limits
TLV Threshold Limit Value
TWA Time weighted average
TWAE Time-Weighted Average

Protective equipment

Personal protective equipment should be worn to prevent contact with eyes, skin or clothing.

Respiratory protection

Do not breathe vapors or mists. Wear a positive-pressure, supplied-air respirator (NIOSH approved TC-19C) while mixing activator/hardener with paint, during application and until all vapors and spray mist are exhausted.

Eye protection

Desirable in all industrial situations. Goggles are preferred to prevent eye irritation. If safety glasses are substituted, include splash guard or side shields.

Skin and body protection

Neoprene gloves and coveralls are recommended.

Hygiene measures

Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Environmental exposure controls

Do not let product enter drains.
For ecological information, refer to Ecological Information Section 12.

9. Physical and chemical properties

Appearance

Form: liquid **Colour:** clear

Flash point	75 °F	
Lower Explosive Limit	Not applicable.	
Upper Explosive Limit	Not applicable.	
Evaporation rate	Slower than Ether	
Vapor pressure of principal solvent	0.8 hPa	
Water solubility	moderate	
Vapor density of principal solvent (Air = 1)	4.6	
Approx. Boiling Range	201 °C	
Approx. Freezing Range	Not applicable.	
Gallon Weight (lbs/gal)	8.0	
Specific Gravity	1.16	
Percent Volatile By Weight	80.00%	
Percent Solids By Weight	20.00%	
pH (waterborne systems only)	Not applicable	
Partition coefficient: n-octanol/water	No data available	
Ignition temperature	240 °C	DIN 51794
Decomposition temperature	Not applicable.	
Viscosity (23 °C)	<100 cP	
VOC* less exempt (lbs/gal)	0.0	

* VOC less exempt (theoretical) and VOC as packaged (theoretical) are based upon the VOC of the packaged material at the point of manufacture.

10. Stability and reactivity

Stability

Stable

Conditions to avoid

Stable under recommended storage and handling conditions (see section 7).

Materials to avoid

None reasonably foreseeable.

Hazardous decomposition products

When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide and dioxide, smoke, oxides of nitrogen.

Hazardous Polymerization

Will not occur.

Sensitivity to Static Discharge

Solvent vapors in air may explode if static grounding and bonding is not used during transfer of this product.

Sensitivity to Mechanical Impact

None known.

11. Toxicological information

Information on likely routes of exposure

Inhalation

May cause nose and throat irritation. May cause nervous system depression characterized by the following progressive steps: headache, dizziness, nausea, staggering gait, confusion, unconsciousness. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. If this product mixed with an isocyanate activator/hardener (see SDS for the activator), the following health effects may apply: Exposure to isocyanates may cause respiratory sensitization. This effect may be permanent. Symptoms include an asthma-like reaction with shortness of breath, wheezing, cough or permanent lung sensitization. This effect may be delayed for several hours after exposure. Repeated overexposure to isocyanates may cause a decrease in lung function, which may be permanent. Individuals with lung or breathing problems or prior reactions to isocyanates must not be exposed to vapors or spray mist of this product.

Ingestion

May result in gastrointestinal distress.

Skin or eye contact

May cause irritation or burning of the eyes. Repeated or prolonged liquid contact may cause skin irritation with discomfort and dermatitis.

Delayed and immediate effects and also chronic effects from short and long term exposure:

Acute oral toxicity

not hazardous

Acute dermal toxicity

Not classified according to GHS criteria

Acute inhalation toxicity

not hazardous

% of unknown composition: 0 %

Skin corrosion/irritation

tert-Butyl acetate Category 3

Serious eye damage/eye irritation

Not classified according to GHS criteria

Respiratory sensitisation

Not classified according to GHS criteria

Skin sensitisation

Not classified according to GHS criteria

Germ cell mutagenicity

Not classified according to GHS criteria

Carcinogenicity

Not classified according to GHS criteria

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**Toxicity for reproduction****Target Organ Systemic Toxicant - Single exposure**

Not classified according to GHS criteria

Target Organ Systemic Toxicant - Repeated exposure**Aspiration toxicity**

Not classified according to GHS criteria

Numerical measures of toxicity (acute toxicity estimation (ATE),etc.)

No information available.

Symptoms related to the physical, chemical and toxicological characteristics

Exposure to component solvents vapours concentration in excess of the stated occupational exposure limit may result in adverse health effect such as mucous membrane and respiratory system irritation and adverse effect on kidney, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Through skin resorbition, solvents can cause some of the effects described here. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in non-allergic contact dermatitis and absorption through the skin. The liquid splashed in the eyes may cause irritation and reversible damage.

Whether the hazardous chemical is listed by NTP, IARC or OSHA

12. Ecological information

There are no data available on the product itself. The product should not be allowed to enter drains or watercourses.

13. Disposal considerations

Waste Disposal Method

Do not allow material to contaminate ground water systems. Incinerate or otherwise dispose of waste material in accordance with Federal, State, Provincial, and local requirements. Do not incinerate in closed containers.

14. Transport information

International transport regulations**IMDG (Sea transport)**

UN number:	1263
Proper shipping name:	PAINT
Hazard Class:	3
Subsidiary Hazard Class:	Not applicable.
Packing group:	III
Marine Pollutant:	Not applicable
EmS:	F-E,S-E

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ICAO/IATA (Air transport)

UN number: 1263
Proper shipping name: PAINT

Hazard Class: 3
Subsidiary Hazard Class: Not applicable.
Packing group: III

DOT

UN number: 1263
Proper shipping name: PAINT

Hazard Class: 3
Subsidiary Hazard Class: Not applicable.
Packing group: III
Marine Pollutant: Not applicable

The transport information is for bulk shipments. Exceptions may apply for smaller containers.

Matters needing attention for transportation

Confirm that there is no breakage, corrosion, or leakage from the container before shipping. Be sure to prevent damage to cargo by loading so as to avoid falling, dropping, or collapse. Ship in appropriate containers with denotation of the content in accordance with the relevant statutes and rules.

15. Regulatory information

TSCA Status

In compliance with TSCA Inventory requirements for commercial purposes.

DSL Status

All components of the mixture are listed on the DSL.

Photochemical Reactivity

Regulatory information

CAS #	Ingredient	EPCRA					CERCLA RQ(lbs)	CAA HAP
		302	TPQ	RQ	311/312	313		
540-88-5	tert-Butyl acetate	N	NR	NR	A,C,F	N	NR	N



Key:

EPCRA	Emergency Planning and Community Right-to-know Act (aka Title III, SARA)
302	Extremely hazardous substances
311/312 Categories	F = Fire Hazard A = Acute Hazard R = Reactivity Hazard C = Chronic Hazard P = Pressure Related Hazard
313 Information	Section 313 Supplier Notification - The chemicals listed above with a 'Y' in the 313 column are subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know act of 1986 and of 40 CFR 372.
CERCLA	Comprehensive Emergency Response, Compensation and Liability Act of 1980.
HAP	Listed as a Clean Air Act Hazardous Air Pollutant.
TPQ	Threshold Planning Quantity.
RQ	Reportable Quantity
NA	not available
NR	not regulated

16. Other information

HMIS rating H: 2 F: 3 R: 0

Glossary of Terms:

ACGIH	American Conference of Governmental Industrial Hygienists.
IARC	International Agency for Research on Cancer.
NTP	National Toxicology Program.
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration.
STEL	Short term exposure limit
TWA	Time-weighted average.
PNOR	Particles not otherwise regulated.
PNOC	Particles not otherwise classified.

NOTE: The list (above) of glossary terms may be modified.

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