Vapor Solve Low Perm 'A' Wheat
ICP Building Solutions Group

Version No: **3.4.4.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **05/27/2021**
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S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	Vapor Solve Low Perm 'A' Wheat
Synonyms	Not Available
Proper shipping name	Resin Solution, flammable (contains 4-chlorobenzotrifluoride)
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Specialty flooring resin

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

Registered company name	**ICP Building Solutions Group**
Address	4565 W Watkins Street Phoenix AZ 85043 United States
Telephone	623-435-2277
Fax	Not Available
Website	www.icpgroup.com
Email	sds@icpgroup.com

Emergency phone number

Association / Organisation	**ChemTel**
Emergency telephone numbers	**1-800-255-3924**
Other emergency telephone numbers	**1-813-248-0585**

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Flammable Liquid Category 3, Eye Irritation Category 2A, Chronic Aquatic Hazard Category 2, Skin Corrosion/Irritation Category 2, Reproductive Toxicity Category 1B, Skin Sensitizer Category 1, Germ cell mutagenicity Category 2, Carcinogenicity Category 2

Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.
H315	Causes skin irritation.

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H360	May damage fertility or the unborn child.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.

Precautionary statement(s) Prevention

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating, lighting equipment.
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/fumes/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P302+P352	IF ON SKIN: Wash with plenty of water.
P333+P313	IF SKIN irritation occurs: Get medical advice/attention.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water (or shower).
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P337+P313	IF eye irritation persists: Get medical advice/attention.
P362+P363	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.

Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
25085-99-8	30-35	bisphenol A diglycidyl ether polymer
9003-36-5	25-30	phenol/ formaldehyde glycidyl ether copolymer
2210-79-9	5-10	o-cresyl glycidyl ether
98-56-6	15-20	4-chlorobenzotrifluoride
2530-83-8	.5-1.5	gamma-glycidoxypropyltrimethoxysilane
13463-67-7	5-10	Titanium Dioxide

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes:

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	▸ Wash out immediately with fresh 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. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▸ Other measures are usually unnecessary.
Ingestion	▸ **IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.** ▸ For advice, contact a Poisons Information Centre or a doctor. ▸ Urgent hospital treatment is likely to be needed. ▸ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. ▸ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist. ▸ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. **Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:** ▸ **INDUCE** vomiting with fingers down the back of the throat, **ONLY IF CONSCIOUS**. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. **NOTE:** Wear a protective glove when inducing vomiting by mechanical means.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination).
For poisons (where specific treatment regime is absent):

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.
EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994
Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

- Foam.
- Dry chemical powder.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Special protective equipment and precautions for fire-fighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive.
Fire/Explosion Hazard	▸ Liquid and vapour are flammable. ▸ Moderate fire hazard when exposed to heat or flame. Combustion products include: carbon dioxide (CO_2)

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	carbon monoxide (CO) aldehydes hydrogen chloride phosgene hydrogen fluoride other pyrolysis products typical of burning organic material.

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	▸ Remove all ignition sources. ▸ Clean up all spills immediately. ·In the event of a spill of a reactive diluent, the focus is on containing the spill to prevent contamination of soil and surface or ground water. ·If irritating vapors are present, an approved air-purifying respirator with organic vapor canister is recommended for cleaning up spills and leaks.
Major Spills	Industrial spills or releases of reactive diluents are infrequent and generally contained. If a large spill does occur, the material should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements. ▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Containers, even those that have been emptied, may contain explosive vapours. ▸ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. ▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of overexposure occurs. ▸ **DO NOT** allow clothing wet with material to stay in contact with skin
Other information	▸ Store in original containers in approved flammable liquid storage area. ▸ Store away from incompatible materials in a cool, dry, well-ventilated area.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Packing as supplied by manufacturer. ▸ Plastic containers may only be used if approved for flammable liquid. ▸ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure.
Storage incompatibility	Titanium dioxide ▸ reacts with strong acids, strong oxidisers ▸ reacts violently with aluminium, calcium, hydrazine, lithium (at around 200 deg C.), magnesium, potassium, sodium, zinc, especially at elevated temperatures - these reactions involves reduction of the oxide and are accompanied by incandescence ▸ dust or powders can ignite and then explode in a carbon dioxide atmosphere Epoxides: ▸ are highly reactive with acids, bases, and oxidising and reducing agents. ▸ react, possibly violently, with anhydrous metal chlorides, ammonia, amines and group 1 metals. ▸ Phenols are incompatible with strong reducing substances such as hydrides, nitrides, alkali metals, and sulfides. ▸ Avoid use of aluminium, copper and brass alloys in storage and process equipment. Glycidyl ethers: ▸ may form unstable peroxides on storage in air ,light, sunlight, UV light or other ionising radiation, trace metals - inhibitor should be maintained at adequate levels ▸ may polymerise in contact with heat, organic and inorganic free radical producing initiators ▸ may polymerise with evolution of heat in contact with oxidisers, strong acids, bases and amines ▸ react violently with strong oxidisers, permanganates, peroxides, acyl halides, alkalis, ammonium persulfate, bromine dioxide ▸ attack some forms of plastics, coatings, and rubber Reactive diluents are stable under recommended storage conditions, but can decompose at elevated temperatures.In some cases, decomposition can cause pressure build-up in closed systems. ▸ Avoid cross contamination between the two liquid parts of product (kit). ▸ If two part products are mixed or allowed to mix in proportions other than manufacturer's recommendation, polymerisation with gelation and evolution of heat (exotherm) may occur. ▸ Avoid reaction with amines, mercaptans, strong acids and oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Continued...

Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
gamma-glycidoxypropyltrimethoxysilane	9.3 mg/m3	100 mg/m3	230 mg/m3

Ingredient	Original IDLH	Revised IDLH
bisphenol A diglycidyl ether polymer	Not Available	Not Available
phenol/ formaldehyde glycidyl ether copolymer	Not Available	Not Available
o-cresyl glycidyl ether	Not Available	Not Available
4-chlorobenzotrifluoride	Not Available	Not Available
gamma-glycidoxypropyltrimethoxysilane	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
bisphenol A diglycidyl ether polymer	E	≤ 0.1 ppm
phenol/ formaldehyde glycidyl ether copolymer	E	≤ 0.1 ppm
o-cresyl glycidyl ether	E	≤ 0.1 ppm
4-chlorobenzotrifluoride	E	≤ 0.1 ppm
gamma-glycidoxypropyltrimethoxysilane	E	≤ 0.1 ppm
Notes:	*Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.*	

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles.
Skin protection	See Hand protection below
Hands/feet protection	**NOTE:** ▸ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical 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. When handling liquid-grade epoxy resins wear chemically protective gloves , boots and aprons. The performance, based on breakthrough times ,of: ·Ethyl Vinyl Alcohol (EVAL laminate) is generally excellent ·Butyl Rubber ranges from excellent to good ·Nitrile Butyl Rubber (NBR) from excellent to fair.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ PVC Apron. ▸ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. ▸ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets).

Respiratory protection

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

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Information on basic physical and chemical properties

Appearance	Epoxy resins are thermosetting polymers, which are crosslinked using hardeners (curing agents). Epoxy is either any of the basic components or the cured end products of epoxy resins, as well as a colloquial name for the epoxide functional group. Epoxy resins, also known as polyepoxides, are a class of reactive prepolymers and polymers which contain at least two epoxide groups.

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)	Not Available	**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)	43	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Flammable.	**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	Immiscible	**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	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. In animal testing, exposure to aerosols of reactive diluents (especially o-cresol glycidyl ether, CAS RN:2210-79-9) has been reported to affect the adrenal gland, central nervous system, kidney, liver, ovaries, spleen, testes, thymus and respiratory tract. Inhalation hazard is increased at higher temperatures.
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Reactive diluents exhibit a range of ingestion hazards. Small amounts swallowed incidental to normal handling operations are not likely to cause injury. Animal testing showed that a single dose of bisphenol A diglycidyl ether (BADGE) given by mouth, caused an increase in immature sperm. At sufficiently high doses the material may be hepatotoxic (i.e. poisonous to the liver). At sufficiently high doses the material may be nephrotoxic (i.e. poisonous to the kidney). Exposure may cause salivation, and increases in blood cholesterol and triglycerides. There may also be increase in weight of the liver and kidney and deposition of fat in the adrenal gland.
Skin Contact	The material may accentuate any pre-existing dermatitis condition Bisphenol A diglycidyl ether (BADGE) may produce contact dermatitis characterized by redness and swelling, with weeping followed by crusting and scaling. A liquid resin with a molecular weight of 350 produced severe skin irritation when applied daily for 4 hours over 20 days. Skin contact with reactive diluents may cause slight to moderate irritation with local redness. Repeated or prolonged skin contact may cause burns. 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 produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. Skin contact with the material may be harmful; systemic effects may result following absorption. The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.

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Eye	Eye contact with reactive diluents may cause slight to severe irritation with the possibility of chemical burns or moderate to severe damage to the cornea. This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.
Chronic	There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Ample evidence exists, from results in experimentation, that developmental disorders are directly caused by human exposure to the material. Glycidyl ethers can cause genetic damage and cancer. Bisphenol A diglycidyl ethers (BADGEs) produce a sensitization dermatitis (skin inflammation) characterized by eczema with blisters and papules, with considerable itching of the back of the hand. This may persist for 10-14 days after withdrawal from exposure and recur immediately on re-exposure. For some reactive diluents, prolonged or repeated skin contact may result in absorption of potentially harmful amounts or allergic skin reactions. Exposure to some reactive diluents (notably, neopentylglycol diglycidyl ether, CAS RN: 17557-23-2) has caused cancer in some animal testing. Bisphenol F, bisphenol A, fluorine-containing bisphenol A (bisphenol AF) and other diphenylalkanes were found to have oestrogen-like effects. Bisphenol F is present in the environment and as a contaminant of food, so humans may therefore be exposed to bisphenol. Bisphenol A may have effects similar to female sex hormones and when administered to pregnant women, may damage the foetus. It may also damage male reproductive organs and sperm. 4-chlorobenzotrifluoride (PCBTF) may have potential to cause cancer because of its structural similarities with two known cancer causing agents.

Vapor Solve Low Perm 'A' Wheat	**TOXICITY**	**IRRITATION**
	Not Available	Not Available

bisphenol A diglycidyl ether polymer	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 6000 mg/kg[2]	Not Available
	Oral(Rat) LD50; >2400 mg/kg[2]	

phenol/ formaldehyde glycidyl ether copolymer	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >400 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
	Oral(Rat) LD50; >2000 mg/kg[2]	Skin: adverse effect observed (irritating)[1]

o-cresyl glycidyl ether	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye (rabbit): non-irritating *
	Inhalation(Rat) LC50; >6.1 ppm4h[1]	Eye: no adverse effect observed (not irritating)[1]
	Oral(Rat) LD50; ~2800 mg/kg[1]	Skin (rabbit): irritating *
		Skin: no adverse effect observed (not irritating)[1]

4-chlorobenzotrifluoride	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >2 mg/kg[2]	Not Available
	Inhalation(Rat) LC50; >32.03 mg/l4h[1]	
	Oral(Rat) LD50; 5546 mg/kg[1]	

gamma-glycidoxypropyltrimethoxysilane	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 4247.9 mg/kg[2]	Not Available
	Inhalation(Rat) LC50; >5.3 mg/l4h[1]	
	Oral(Rat) LD50; >5350 mg/kg[1]	

Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*

Vapor Solve Low Perm 'A' Wheat	Exposure to titanium dioxide is via inhalation, swallowing or skin contact. When inhaled, it may deposit in lung tissue and lymph nodes causing dysfunction of the lungs and immune system. Absorption by the stomach and intestines depends on the size of the particle. The various members of the bisphenol family produce hormone like effects, seemingly as a result of binding to estrogen receptor-related receptors (ERRs; not to be confused with estrogen receptors) A suspected estrogen-related receptors (ERR) binding agent: Estrogen-related receptors (ERR, oestrogen-related receptors) are so named because of sequence homology with estrogen receptors but do not appear to bind estrogens or other tested steroid hormones. The ERR family have been demonstrated to control energy homeostasis, oxidative metabolism and mitochondrial biogenesis ,while effecting mammalian physiology in the heart, brown adipose tissue, white adipose tissue, placenta, macrophages, and demonstrated additional roles in diabetes and cancer. ERRs bind enhancers throughout the genome where they exert effects on gene regulation Although their overall functions remain uncertain, they also share DNA-binding sites, co-regulators, and target genes with the conventional estrogen receptors ERalpha and ERbeta and may function to modulate estrogen signaling pathways. · ERR-alpha has wide tissue distribution but it is most highly expressed in tissues that preferentially use fatty acids as energy sources such as kidney, heart, brown adipose tissue, cerebellum, intestine, and skeletal muscle. ERRalpha has been detected in normal adrenal cortex tissues, in which its expression is possibly related to adrenal development, with a possible role in fetal adrenal function, in dehydroepiandrosterone (DHEAS) production in adrenarche, and also in steroid production of post-adrenarche/adult life.

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BISPHENOL A DIGLYCIDYL ETHER POLYMER	Bisphenol A diglycidyl ethers (BADGEs) produce a sensitization dermatitis (skin inflammation) characterized by eczema with blisters and papules, with considerable itching of the back of the hand. This may persist for 10-14 days after withdrawal from exposure and recur immediately on re-exposure. Bisphenol A may have effects similar to female sex hormones and when administered to pregnant women, may damage the foetus. It may also damage male reproductive organs and sperm. Glycidyl ethers can cause genetic damage and cancer. The substance is classified by IARC as Group 3: **NOT** classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. * [Reichold]; ** [Epoxylite Corp.]; for monomer
PHENOL/ FORMALDEHYDE GLYCIDYL ETHER COPOLYMER	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
O-CRESYL GLYCIDYL ETHER	o-CGE is a direct-acting mutagen in in-vitro test systems. Studies in vivo, including micronucleus tests and assays in transgenic animals, showed no mutagenic activity. Causes sensitisation * * Huntsman Araldite DY-K/ CH SDS
4-CHLOROBENZOTRIFLUORIDE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound.
GAMMA-GLYCIDOXYPROPYLTRIMETHOXYSILANE	Low molecular weight alkoxysilane can cause irreversible lung damage when inhaled at low dose. It is not an obvious skin irritant. For gamma-glycidopropyltrimehoxysilane (GPTMS): GPTMS undergoes rapid hydrolysis and the observed toxicity is expected to be due primarily to methanol and silanetriols. GPTMS is mildly irritating to the skin and eyes and is not a known skin sensitiser in humans or in animals.
Vapor Solve Low Perm 'A' Wheat & O-CRESYL GLYCIDYL ETHER	Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.
Vapor Solve Low Perm 'A' Wheat & BISPHENOL A DIGLYCIDYL ETHER POLYMER & PHENOL/ FORMALDEHYDE GLYCIDYL ETHER COPOLYMER & O-CRESYL GLYCIDYL ETHER	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.
Vapor Solve Low Perm 'A' Wheat & BISPHENOL A DIGLYCIDYL ETHER POLYMER	Animal testing over 13 weeks showed bisphenol A diglycidyl ether (BADGE) caused mild to moderate, chronic, inflammation of the skin. Reproductive and Developmental Toxicity: Animal testing showed BADGE given over several months caused reduction in body weight but had no reproductive effects.
Vapor Solve Low Perm 'A' Wheat & BISPHENOL A DIGLYCIDYL ETHER POLYMER & PHENOL/ FORMALDEHYDE GLYCIDYL ETHER COPOLYMER	The chemical structure of hydroxylated diphenylalkanes or bisphenols consists of two phenolic rings joined together through a bridging carbon. This class of endocrine disruptors that mimic oestrogens is widely used in industry, particularly in plastics. Bisphenol A (BPA) and some related compounds exhibit oestrogenic activity in human breast cancer cell line MCF-7, but there were remarkable differences in activity.
Vapor Solve Low Perm 'A' Wheat & BISPHENOL A DIGLYCIDYL ETHER POLYMER & O-CRESYL GLYCIDYL ETHER & GAMMA-GLYCIDOXYPROPYLTRIMETHOXYSILANE	Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) share many common characteristics with respect to animal toxicology. One such oxirane is ethyloxirane; data presented here may be taken as representative.
Vapor Solve Low Perm 'A' Wheat & 4-CHLOROBENZOTRIFLUORIDE	Medium to long term exposure to chlorobenzotrifluoride may produce increase in weight of the liver, kidney, and thyroid gland at high doses. Only limited reproductive effects were noted, and no gene alteration effects.
BISPHENOL A DIGLYCIDYL ETHER POLYMER & O-CRESYL GLYCIDYL ETHER & GAMMA-GLYCIDOXYPROPYLTRIMETHOXYSILANE	For 1,2-butylene oxide (ethyloxirane): In animal testing, ethyloxirane increased the incidence of tumours of the airways in animals exposed via inhalation. However, tumours were not observed in mice chronically exposed via skin.

Acute Toxicity	✗	**Carcinogenicity**	✓
Skin Irritation/Corrosion	✓	**Reproductivity**	✓
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✗
Respiratory or Skin sensitisation	✓	**STOT - Repeated Exposure**	✗
Mutagenicity	✓	**Aspiration Hazard**	✗

Legend: ✗ *– Data either not available or does not fill the criteria for classification*
✓ *– Data available to make classification*

SECTION 12 Ecological information

Toxicity

Vapor Solve Low Perm 'A' Wheat

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

bisphenol A diglycidyl ether polymer

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

phenol/ formaldehyde glycidyl ether copolymer

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

Continued...

o-cresyl glycidyl ether	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC50(ECx)	48h	Crustacea	~3.3mg/l	2
	EC50	72h	Algae or other aquatic plants	~5.1mg/l	2
	LC50	96h	Fish	~2.8~5.1mg/l	2
	EC50	48h	Crustacea	~3.3mg/l	2
4-chlorobenzotrifluoride	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	NOEC(ECx)	504h	Crustacea	0.03mg/l	1
	EC50	72h	Algae or other aquatic plants	>0.41mg/l	2
	LC50	96h	Fish	3mg/l	2
	EC50	48h	Crustacea	3.68mg/l	1
gamma-glycidoxypropyltrimethoxysilane	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC50	72h	Algae or other aquatic plants	>420mg/l	2
	EC50	48h	Crustacea	473mg/l	2
	LC50	96h	Fish	4.9mg/l	2
	NOEC(ECx)	96h	Fish	1.5mg/l	2
	EC50	96h	Algae or other aquatic plants	250mg/l	2

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Liquid epoxy resins and some reactive diluents are not readily biodegradable, although its epoxy functional groups are hydrolysed in contact with water, they have the potential to bio-accumulate and are moderately toxic to aquatic organisms. They are generally classified as dangerous for the environment according to the European Union classification criteria.
For bisphenol A and related bisphenols:
Environmental fate:
Biodegradability (28 d) 89% - Easily biodegradable
Bioconcentration factor (BCF) 7.8 mg/l
Bisphenol A, its derivatives and analogues, can be released from polymers, resins and certain substances by metabolic products
Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII
As an environmental contaminant, bisphenol A interferes with nitrogen fixation at the roots of leguminous plants associated with the bacterial symbiont Sinorhizobium meliloti. Despite a half-life in the soil of only 1-10 days, its ubiquity makes it an important pollutant.
For 4-chlorobenzotrifluoride (PCBTF):
Environmental Fate:
Soil absorption is anticipated. This substance is relatively biodegradable and is not expected to bioaccumulate or bioconcentrate (BCF 120).
Reactive diluents generally have a low to moderate potential for bioconcentration (tendency to accumulate in the food chain) and a high to very high potential for mobility in soil. Small amounts that escape to the atmosphere will photodegrade.
Environmental toxicity is a function of the n-octanol/water partition coefficient (log Pow, log Kow). Compounds with log Pow >5 act as neutral organics, but at a lower log Pow, the toxicity of epoxide-containing polymers is greater than that predicted for simple narcotics.
Significant environmental findings are limited. Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) exhibit common characteristics with respect to environmental fate and ecotoxicology.
For 1,2-Butylene oxide (Ethyloxirane):
log Kow values of 0.68 and 0.86. BAF and BCF : 1 to 17 L./kg.
Reactive diluents which are only slightly soluble in water and do not evaporate quickly are expected to sink to the bottom or float to the top, depending on the density, where they would be expected to biodegrade slowly.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
bisphenol A diglycidyl ether polymer	HIGH	HIGH
o-cresyl glycidyl ether	HIGH	HIGH
4-chlorobenzotrifluoride	HIGH	HIGH
gamma-glycidoxypropyltrimethoxysilane	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
bisphenol A diglycidyl ether polymer	LOW (LogKOW = 2.6835)
o-cresyl glycidyl ether	LOW (LogKOW = 2.1609)
4-chlorobenzotrifluoride	LOW (BCF = 202)
gamma-glycidoxypropyltrimethoxysilane	LOW (LogKOW = -0.9152)

Mobility in soil

Continued...

Ingredient	Mobility
bisphenol A diglycidyl ether polymer	LOW (KOC = 51.43)
o-cresyl glycidyl ether	LOW (KOC = 67.93)
4-chlorobenzotrifluoride	LOW (KOC = 1912)
gamma-glycidoxypropyltrimethoxysilane	LOW (KOC = 90.22)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Waste Management Production waste from epoxy resins and resin systems should be treated as hazardous waste in accordance with National regulations. Fire retarded resins containing halogenated compounds should also be treated as special waste. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. Removal of bisphenol A (BPA) from aqueous solutions was accomplished by adsorption of enzymatically generated quinone derivatives on chitosan beads. The use of chitosan in the form of beads was found to be more effective because heterogeneous removal of BPA with chitosan beads was much faster than homogeneous removal of BPA with chitosan solutions, and the removal efficiency was enhanced by increasing the amount of chitosan beads dispersed in the BPA solutions and BPA was completely removed by quinone adsorption in the presence of chitosan beads more than 0.10 cm3/cm3. ▸ Recycle wherever possible. ▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	

Land transport (DOT)

UN number	1866
UN proper shipping name	Resin Solution, flammable (contains 4-chlorobenzotrifluoride)
Transport hazard class(es)	Class: 3 Subrisk: Not Applicable
Packing group	III
Environmental hazard	Environmentally hazardous
Special precautions for user	Hazard identification (Kemler): Not Applicable Classification code: Not Applicable Hazard Label: 3 Special provisions: B1, B52, IB3, T2, TP1 Limited quantity: Not Applicable Tunnel Restriction Code: Not Applicable

Air transport (ICAO-IATA / DGR)

UN number	1866
UN proper shipping name	Resin solution flammable (contains 4-chlorobenzotrifluoride)
Transport hazard class(es)	ICAO/IATA Class: 3 ICAO / IATA Subrisk: Not Applicable ERG Code: 3L
Packing group	III

Continued...

Environmental hazard	Environmentally hazardous
Special precautions for user	Special provisions: A3 Cargo Only Packing Instructions: 366 Cargo Only Maximum Qty / Pack: 220 L Passenger and Cargo Packing Instructions: 355 Passenger and Cargo Maximum Qty / Pack: 60 L Passenger and Cargo Limited Quantity Packing Instructions: Y344 Passenger and Cargo Limited Maximum Qty / Pack: 10 L

Sea transport (IMDG-Code / GGVSee)

UN number	1866
UN proper shipping name	RESIN SOLUTION flammable (contains 4-chlorobenzotrifluoride)3, PGII, Marine Pollutant (Bisphenol A diglycidyl ether polymer
Transport hazard class(es)	IMDG Class: 3 IMDG Subrisk: Not Applicable
Packing group	III
Environmental hazard	Marine Pollutant
Special precautions for user	EMS Number: F-E , S-E Special provisions: 223 955 Limited Quantities: 5 L

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

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
bisphenol A diglycidyl ether polymer	Not Available
phenol/ formaldehyde glycidyl ether copolymer	Not Available
o-cresyl glycidyl ether	Not Available
4-chlorobenzotrifluoride	Not Available
gamma-glycidoxypropyltrimethoxysilane	Not Available
Titanium Dioxide	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
bisphenol A diglycidyl ether polymer	Not Available
phenol/ formaldehyde glycidyl ether copolymer	Not Available
o-cresyl glycidyl ether	Not Available
4-chlorobenzotrifluoride	Not Available
gamma-glycidoxypropyltrimethoxysilane	Not Available
Titanium Dioxide	Not Available

SECTION 15 Regulatory information

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

bisphenol A diglycidyl ether polymer is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
US TSCA Chemical Substance Inventory - Interim List of Active Substances
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

phenol/ formaldehyde glycidyl ether copolymer is found on the following regulatory lists

US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

o-cresyl glycidyl ether is found on the following regulatory lists

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Chemical Substance Inventory - Interim List of Active Substances

4-chlorobenzotrifluoride is found on the following regulatory lists

Continued...

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
US - California Proposition 65 - Carcinogens
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Chemical Substance Inventory - Interim List of Active Substances
US TSCA Section 4/12 (b) - Sunset Dates/Status

gamma-glycidoxypropyltrimethoxysilane is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Chemical Substance Inventory - Interim List of Active Substances

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	Yes
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	Yes
Acute toxicity (any route of exposure)	No
Reproductive toxicity	Yes
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	Yes
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

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 Proposition 65 - Carcinogens: Listed substance

4-chlorobenzotrifluoride Listed

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (bisphenol A diglycidyl ether polymer; phenol/ formaldehyde glycidyl ether copolymer; o-cresyl glycidyl ether; 4-chlorobenzotrifluoride; gamma-glycidoxypropyltrimethoxysilane; Titanium Dioxide)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	No (bisphenol A diglycidyl ether polymer)
Japan - ENCS	No (bisphenol A diglycidyl ether polymer; phenol/ formaldehyde glycidyl ether copolymer)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (o-cresyl glycidyl ether; 4-chlorobenzotrifluoride; gamma-glycidoxypropyltrimethoxysilane)

Continued...

National Inventory	Status
Vietnam - NCI	Yes
Russia - FBEPH	No (o-cresyl glycidyl ether)
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 Other information

Revision Date	05/27/2021
Initial Date	05/24/2021

CONTACT POINT

PLEASE NOTE THAT TITANIUM DIOXIDE IS NOT PRESENT IN CLEAR OR NEUTRAL BASES

SDS Version Summary

Version	Date of Update	Sections Updated
2.4.3.1	05/10/2021	Regulation Change
2.4.4.1	05/24/2021	Regulation Change
2.4.4.1	05/27/2021	Ingredients, Name

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. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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end of SDS