

Epoxy 400 "A" White ICP Construction Inc.

Version No: 1.4

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

Issue Date: **07/25/2022** Print Date: **07/25/2022** S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	Epoxy 400 "A" White	
Synonyms	Not Available	
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (contains bisphenol A diglycidyl ether polymer)	
Other means of identification	Not Available	

Recommended use of the chemical and restrictions on use

Relevant identified uses Specialty floor coating

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

Registered company name	ICP Construction Inc.	
Address	Dascomb Road Andover, MA 01810 United States	
Telephone	6-667-5119 1-978-623-9987	
Fax	ot Available	
Website	www.icpgroup.com	
Email	sds@icpgroup.com	

Emergency phone number

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Association / Orga	ganisation	ChemTel
Emergency to	telephone numbers	1-800-255-3924
Other emergency to	telephone numbers	1-813-248-0585

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

NFPA 704 diamond



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

Hazardous to the Aquatic Environment Long-Term Hazard Category 2, Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Germ Cell Mutagenicity Category 2

Label elements

Hazard pictogram(s)







Signal word

Warning

Hazard statement(s)

H41′

Toxic to aquatic life with long lasting effects.

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H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.

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.	
P261	d breathing dust/fumes/gas/mist/vapors/spray	
P272	ntaminated work clothing should not be allowed out of the workplace.	
P273	void release to the environment.	
P280	Wear protective gloves and protective clothing.	

Precautionary statement(s) Response

P308+P313	F exposed or concerned: Get medical advice/ attention.	
P302+P352	ON SKIN: Wash with plenty of water.	
P333+P313	skin irritation or rash occurs: Get medical advice/attention.	
P362+P354	Take off contaminated clothing and wash it before reuse.	
P391	Collect spillage.	

Precautionary statement(s) Storage

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.

Not Applicable

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name	
25085-99-8	60-80	bisphenol A diglycidyl ether polymer	
68609-97-2	1-5	(C12-14)alkylglycidyl ether	
13463-67-7*	10-30	<u>Titanium Dioxide Ti02</u>	
2210-79-9	1-5	o-cresyl glycidyl ether	
100-51-6	5-10	benzyl alcohol	

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

Description of mist ala measur	
Eye Contact	If this product comes in contact with the eyes: 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 or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

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Transport to hospital, or doctor. ► 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. Ingestion Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed 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 ▶ Alert Fire Brigade and tell them location and nature of hazard. Fire Fighting

Combustible. Slight fire hazard when exposed to heat or flame. Combustion products include:

Fire/Explosion Hazard

carbon dioxide (CO2)

aldehydes

other pyrolysis products typical of burning organic material

Wear full body protective clothing with breathing apparatus

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

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See section 12

Methods and material for containment and cleaning up

Minor Spills

- 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

Environmental hazard - contain spillage.

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.

Major Spills

► Clear area of personnel and move upwind.

▶ Alert Fire Brigade and tell them location and nature of hazard.

Environmental hazard - contain spillage. 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.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- DO NOT allow clothing wet with material to stay in contact with skin

Other information

- Store in original containers.
- Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container

- Metal can or drum
- Packaging as recommended by manufacturer.
- ► Check all containers are clearly labelled and free from leaks.

Benzyl alcohol:

- ▶ may froth in contact with water
- ▶ slowly oxidises in air, oxygen forming benzaldehyde
- is incompatible with mineral acids, caustics, aliphatic amines, isocyanates
- reacts violently with strong oxidisers, and explosively with sulfuric acid at elevated temperatures
- ► corrodes aluminium at high temperatures
- is incompatible with aluminum, iron, steel
- tattacks some nonfluorinated plastics; may attack, extract and dissolve polypropylene

Benzyl alcohol contaminated with 1.4% hydrogen bromide and 1.2% of dissolved iron(II) polymerises exothermically above 100 deg. C. In general, uncured epoxy resins have only poor mechanical, chemical and heat resistance properties. However, good properties are obtained by reacting the linear epoxy resin with suitable curatives to form three-dimensional cross-linked thermoset structures.

Epoxides

Storage incompatibility

- $\mbox{\ }^{\blacktriangleright}\mbox{\ }$ are highly reactive with acids, bases, and oxidising and reducing agents.
- react, possibly violently, with anhydrous metal chlorides, ammonia, amines and group 1 metals.

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
- $\mbox{\ensuremath{\,^{\blacktriangleright}}}\mbox{\ensuremath{\,}}$ 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

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-3	Titanium Dioxide Ti02	Inert or Nuisance Dust: Total Dust	15 mg/m3 / 50 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	Titanium Dioxide Ti02	Inert or Nuisance Dust: Respirable fraction	5 mg/m3 / 15 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	Titanium Dioxide Ti02	Titanium dioxide - Total dust	15 mg/m3	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	Titanium Dioxide Ti02	Titanium dioxide	Not Available	Not Available	Not Available	Ca; See Appendix A

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Ingredient	TEEL-1	TEEL-2		TEEL-3	
Titanium Dioxide Ti02	30 mg/m3	330 mg/m3		2,000 mg/m3	
benzyl alcohol	30 ppm	52 ppm		740 ppm	
Ingredient	Original IDLH		Revised IDLH		
bisphenol A diglycidyl ether polymer	Not Available		Not Available	Not Available	
(C12-14)alkylglycidyl ether	Not Available		Not Available	Not Available	
Titanium Dioxide Ti02	5,000 mg/m3	5,000 mg/m3		Not Available	
o-cresyl glycidyl ether	Not Available	Not Available		Not Available	
benzyl alcohol	Not Available	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		
(C12-14)alkylglycidyl ether	E	≤ 0.1 ppm		
o-cresyl glycidyl ether	E	≤ 0.1 ppm		
benzyl alcohol	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			

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







range of exposure concentrations that are expected to protect worker health.



Eye and face protection

- Safety glasses with side shields.
- Chemical goggles.

Skin protection

See Hand protection below

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.
- DO NOT use solvent to clean the skin

Body protection

Hands/feet protection

See Other protection below

Other protection

- Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalentl
- Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges.
- Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels.
- Overalls.
- P.V.C apron.

Respiratory protection

Type A-P 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
- 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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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. Reactive diluents are generally colourless to yellow/ amber, low viscosity liquids with mild ether-like odour; solubility in water varies across the family. Substitution on the phenolic rings may generate solids.

Bisphenol A epoxy resin.

Important epoxy resins are produced from combining epichlorohydrin and bisphenol A to give bisphenol A diglycidyl ethers.

Increasing the ratio of bisphenol A to epichlorohydrin during manufacture produces higher molecular weight linear polyethers with glycidyl end groups, which are semi-solid to hard crystalline materials at room temperature depending on the molecular weight achieved. As the molecular weight of the resin increases, the epoxide content reduces and the material behaves more and more like a thermoplastic.

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 (°C)	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)	>100	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	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 (Not Available%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	79.7

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 or	toxicological	effects
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Inhaled	The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. 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. Inhalation of benzyl alcohol may affect breathing (causing depression and paralysis of breathing and lower blood pressure. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.
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. Swallowing large doses of benzyl alcohol may cause abdominal pain, nausea, vomiting and diarrhea. It may affect behaviour and/or the central nervous system, and cause headache, sleepiness, excitement, dizziness, inco-ordination, coma, convulsions and other symptoms of central nervous system depression.

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Skin contact with the material may be harmful; systemic effects may result following absorption. This material can cause inflammation of the skin on contact in some persons 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** Skin contact with reactive diluents may cause slight to moderate irritation with local redness. Repeated or prolonged skin contact may cause 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. This material can cause eye irritation and damage in some persons. 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 Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Strong evidence exists that this substance may cause irreversible mutations (though not lethal) even following a single exposure. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. There is sufficient evidence to suggest that this material directly causes cancer in humans. 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 Chronic 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. Prolonged or repeated exposure to benzyl alcohol may cause allergic contact dermatitis (skin inflammation). Prolonged or repeated swallowing may affect behaviour and the central nervous system with symptoms similar to acute swallowing. IRRITATION TOXICITY Epoxy 400 "A" White Not Available Not Available IRRITATION TOXICITY bisphenol A diglycidyl ether Dermal (rabbit) LD50: 6000 mg/kg^[2] Not Available polymer Oral (Rat) LD50; >2400 mg/kg^[2] TOXICITY IRRITATION Eye (rabbit): mild [Ciba] Oral (Rat) LD50; >10000 mg/kg^[2] Eye: adverse effect observed (irritating)^[1] Skin (guinea pig): sensitiser Skin (human): Irritant (C12-14)alkylglycidyl ether Skin (human): non- sensitiser Skin (rabbit): moderate Skin: Moderate Skin: adverse effect observed (irritating)^[1] TOXICITY IRRITATION dermal (hamster) LD50: >=10000 mg/kg[2] Eye: no adverse effect observed (not irritating)[1] **Titanium Dioxide Ti02** Inhalation(Rat) LC50; >2.28 mg/l4h^[1] Skin: no adverse effect observed (not irritating)^[1] Oral (Rat) LD50; >=2000 mg/kg^[1] TOXICITY IRRITATION Eye (rabbit): non-irritating * dermal (rat) LD50: >2000 mg/kg[1] Inhalation(Rat) LC50; >6.1 ppm4h^[1] Eye: no adverse effect observed (not irritating)^[1] o-cresyl glycidyl ether Oral (Rat) LD50; >2000 mg/kg[2] Skin (rabbit): irritating * Skin: no adverse effect observed (not irritating)^[1] TOXICITY IRRITATION Dermal (rabbit) LD50: 2000 mg/kg^[2] Eye (rabbit): 0.75 mg open SEVERE Inhalation(Rat) LC50; >4.178 mg/L4h^[1] Eye: adverse effect observed (irritating)^[1] benzyl alcohol Oral (Rat) LD50; 1230 mg/kg[2] Skin (man): 16 mg/48h-mild Skin (rabbit):10 mg/24h open-mild Skin: no adverse effect observed (not irritating)[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

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

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on re-exposure 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. 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 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 O-CRESYL GLYCIDYL ETHER Unlike benzylic alcohols, the beta-hydroxyl group of the members of benzyl alkyl alcohols contributes to break down reactions but do not undergo phase II metabolic activation. Though structurally similar to cancer causing ethyl benzene, phenethyl alcohol is only of negligible concern due to limited similarity in their pattern of activity. For benzoates: Benzyl alcohol, benzoic acid and its sodium and potassium salt have a common metabolic and excretion pathway. All but benzyl alcohol are considered to be unharmful and of low acute toxicity. BENZYL ALCOHOL 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. This is a member or analogue of a group of benzyl derivatives generally regarded as safe (GRAS), based partly on their self-limiting properties as flavouring substances in food. In humans and other animals, they are rapidly absorbed, broken down and excreted, with a wide safety margin. The aryl alkyl alcohol (AAA) fragrance ingredients have diverse chemical structures, with similar metabolic and toxicity profiles. The AAA fragrances demonstrate low acute and subchronic toxicity by skin contact and swallowing. Epoxy 400 "A" White & Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of O-CRESYL GLYCIDYL ETHER producing mutation. Epoxy 400 "A" White & **BISPHENOL A DIGLYCIDYL** ETHER POLYMER & The following information refers to contact allergens as a group and may not be specific to this product. (C12-14)ALKYLGLYCIDYL Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. **ETHER & O-CRESYL GLYCIDYL ETHER & BENZYL** ALCOHOL Adverse reactions to fragrances in perfumes and fragranced cosmetic products include allergic contact dermatitis, irritant contact dermatitis, Epoxy 400 "A" White & sensitivity to light, immediate contact reactions, and pigmented contact dermatitis. Airborne and connubial contact dermatitis occurs. BENZYL ALCOHOL Fragrance allergens act as haptens, low molecular weight chemicals that cause an immune response only when attached to a carrier protein. However, not all sensitizing fragrance chemicals are directly reactive, but require previous activation. Epoxy 400 "A" White & Animal testing over 13 weeks showed bisphenol A diglycidyl ether (BADGE) caused mild to moderate, chronic, inflammation of the skin. **BISPHENOL A DIGLYCIDYL** Reproductive and Developmental Toxicity: Animal testing showed BADGE given over several months caused reduction in body weight but had no ETHER POLYMER reproductive effects. Epoxy 400 "A" White & **BISPHENOL A DIGLYCIDYL** ETHER POLYMER & Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) share many common characteristics with respect to animal toxicology. One (C12-14)ALKYLGLYCIDYL such oxirane is ethyloxirane; data presented here may be taken as representative. **ETHER & O-CRESYL GLYCIDYL ETHER** BISPHENOL A DIGLYCIDYL **ETHER POLYMER &** For 1,2-butylene oxide (ethyloxirane): (C12-14)ALKYLGLYCIDYL In animal testing, ethyloxirane increased the incidence of tumours of the airways in animals exposed via inhalation. However, tumours were not **ETHER & O-CRESYL** observed in mice chronically exposed via skin. **GLYCIDYL ETHER Acute Toxicity** Carcinogenicity × × Skin Irritation/Corrosion Reproductivity Serious Eye Damage/Irritation STOT - Single Exposure Respiratory or Skin V STOT - Repeated Exposure × sensitisation

Legend:

X – Data either not available or does not fill the criteria for classification

Data available to make classification

Aspiration Hazard

SECTION 12 Ecological information

Mutagenicity

Toxicity

Epoxy 400 "A" White	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
(C12-14)alkylglycidyl ether	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	48h	Crustacea	6.07mg/l	2

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Epoxy 400 "A" White

	EC50	48h	Crustacea	6.07mg/l	2
	LC50	96h	Fish	>5000mg/l	2
	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1008h	Fish	<1.1-9.6	7
	EC50	72h	Algae or other aquatic plants	3.75-7.58mg/l	4
Titanium Dioxide Ti02	EC50	48h	Crustacea	1.9mg/l	2
	NOEC(ECx)	504h	Crustacea	0.02mg/l	4
	LC50	96h	Fish	1.85-3.06mg/l	4
	EC50	96h	Algae or other aquatic plants	179.05mg/l	2
	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	~5.1mg/l	2
	EC50	48h	Crustacea	~3.3mg/l	2
o-cresyl glycidyl ether	EC50(ECx)	24h	Crustacea	1-10mg/l	Not Availabl
	LC50	96h	Fish	1-10mg/l	Not Availabl
	Endpoint	Test Duration (hr)	Species	Value	Sourc
	EC50	72h	Algae or other aquatic plants	500mg/l	2
	EC50	48h	Crustacea	230mg/l	2
benzyl alcohol	NOEC(ECx)	336h	Fish	5.1mg/l	2
	LC50	96h	Fish	10mg/l	2
	EC50	96h	Algae or other aquatic plants	76.828mg/l	2
Legend:	EC50 Extracted from 1 Ecotox database	96h I. IUCLID Toxicity Data 2. Europe EC	Algae or other aqua	xicological Inform	

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. 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.

For benzyl alcohol: log Kow: 1.1Koc: <5Henry's atm m3 /mol: 3.91E-07BOD 5: 1.55-1.6,33-62%COD: 96%ThOD: 2.519BCF: 4

Bioaccumulation: Not significant

Anaerobic Effects: Significant degradation.

Effects on algae and plankton: Inhibits degradation of glucose

Degradation Biological: Significant processes

Abiotic: RxnOH*,no photochem

Ecotoxicity: Fish LC50 (48 h): fathead minnow 770 mg/l; (72 h): 480 mg/l; (96 h) 460 mg/l.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
bisphenol A diglycidyl ether polymer	нівн	HIGH
Titanium Dioxide Ti02	HIGH	HIGH
o-cresyl glycidyl ether	HIGH	HIGH
benzyl alcohol	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
bisphenol A diglycidyl ether polymer	LOW (LogKOW = 2.6835)
Titanium Dioxide Ti02	LOW (BCF = 10)
o-cresyl glycidyl ether	LOW (LogKOW = 2.1609)
benzyl alcohol	LOW (LogKOW = 1.1)

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Epoxy 400 "A" White

 Ingredient
 Mobility

 bisphenol A diglycidyl ether polymer
 LOW (KOC = 51.43)

 Titanium Dioxide Ti02
 LOW (KOC = 23.74)

 o-cresyl glycidyl ether
 LOW (KOC = 67.93)

 benzyl alcohol
 LOW (KOC = 15.66)

SECTION 13 Disposal considerations

Waste treatment methods

- 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.

Product / Packaging disposal

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.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.

SECTION 14 Transport information

Labels Required



Marine Pollutant



Land transport (DOT)

UN number	3082			
UN proper shipping name	Environmentally hazar	Environmentally hazardous substance, liquid, n.o.s. (contains bisphenol A diglycidyl ether polymer)		
Transport hazard class(es)	Class 9 Subrisk Not Appl			
Packing group				
Environmental hazard	Environmentally hazardous			
Special precautions for user	Hazard Label 9 Special provisions 8, 146, 173, 335, IB3, T4, TP1, TP29			

For Individual Packages of Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 that contain LESS THAN the reportable quantity (5 kg or 5 L) - Not Regulated

For Individual Packages of Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 that contain MORE THAN the reportable quantity (5 kg or 5 L) - Regulated and classified as below:

Air transport (ICAO-IATA / DGR)

Air transport (ICAO-IAIA / DGR	9			
UN number	3082	3082		
UN proper shipping name	Environmentally hazardo	Environmentally hazardous substance, liquid, n.o.s. * (contains bisphenol A diglycidyl ether polymer)		
	ICAO/IATA Class	9		
Transport hazard class(es)	ICAO / IATA Subrisk	Not Applicable		
	ERG Code	9L		
Packing group	Ш	III		
Environmental hazard	Environmentally hazardo	Environmentally hazardous		
	Special provisions Cargo Only Packing Ir	nstructions	A97 A158 A197 A215	
Special precautions for user	Cargo Only Maximum Qty / Pack		450 L	
	Passenger and Cargo	Packing Instructions	964	

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Epoxy 400 "A" White

Passenger and Cargo Ma	ximum Qty / Pack	450 L
Passenger and Cargo Lin	nited Quantity Packing Instructions	Y964
Passenger and Cargo Lin	nited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

UN number	3082			
UN proper shipping name	ENVIRONMENTALL	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains bisphenol A diglycidyl ether polymer)		
Transport hazard class(es)		9 Not Applicable		
Packing group	III			
Environmental hazard	Marine Pollutant			
Special precautions for user	EMS Number Special provisions Limited Quantities			

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
(C12-14)alkylglycidyl ether	Not Available
Titanium Dioxide Ti02	Not Available
o-cresyl glycidyl ether	Not Available
benzyl alcohol	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
bisphenol A diglycidyl ether polymer	Not Available
(C12-14)alkylglycidyl ether	Not Available
Titanium Dioxide Ti02	Not Available
o-cresyl glycidyl ether	Not Available
benzyl alcohol	Not Available

SECTION 15 Regulatory information

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

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

Chemical Footprint Project - Chemicals of High Concern List

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

US TSCA Chemical Substance Inventory - Interim List of Active Substances

(C12-14)alkylglycidyl ether is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

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

US TSCA Chemical Substance Inventory - Interim List of Active Substances

Titanium Dioxide Ti02 is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

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

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5

US - California Proposition 65 - Carcinogens

US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List

US - Massachusetts - Right To Know Listed Chemicals

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

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

US DOE Temporary Emergency Exposure Limits (TEELs)

US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule

US NIOSH Carcinogen List

US NIOSH Recommended Exposure Limits (RELs)

US TSCA Section 4/12 (b) - Sunset Dates/Status

US OSHA Permissible Exposure Limits (PELs) Table Z-1

US OSHA Permissible Exposure Limits (PELs) Table Z-3

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

US TSCA Chemical Substance Inventory - Interim List of Active Substances

US TSCA Chemical Substance Inventory - Interim List of Active Substances

benzyl alcohol is found on the following regulatory lists

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US - Massachusetts - Right To Know Listed Chemicals US AIHA Workplace Environmental Exposure Levels (WEELs) US DOE Temporary Emergency Exposure Limits (TEELs)

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL) 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

Section 311/312 hazard categories	
Flammable (Gases, Aerosols, Liquids, or Solids)	No
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	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	No
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



MARNING: This product can expose you to chemicals including Titanium Dioxide Ti02, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov.

National Inventory Status

National Inventory	Status	
Australia - AIIC / Australia Non-Industrial Use	Yes	
Canada - DSL	Yes	
Canada - NDSL	No (bisphenol A diglycidyl ether polymer; (C12-14)alkylglycidyl ether; Titanium Dioxide Ti02; o-cresyl glycidyl ether; benzyl alcohol)	
China - IECSC	Yes	
Europe - EINEC / ELINCS / NLP	No (bisphenol A diglycidyl ether polymer)	
Japan - ENCS	No (bisphenol A diglycidyl ether polymer; (C12-14)alkylglycidyl ether)	
Korea - KECI	Yes	
New Zealand - NZIoC	Yes	
Philippines - PICCS	Yes	
USA - TSCA	Yes	
Taiwan - TCSI	Yes	
Mexico - INSQ	No ((C12-14)alkylglycidyl ether; o-cresyl glycidyl ether)	
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. These ingredients may be exempt or will require registration	

SECTION 16 Other information

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Epoxy 400 "A" White

Initial Date 07/21/2022

CONTACT POINT

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

SDS Version Summary

Version	Date of Update	Sections Updated
0.4	07/25/2022	Ingredients, Physical Properties, Name

Other information

Ingredients with multiple cas numbers

•	
Name	CAS No
(C12-14)alkylglycidyl ether	68609-97-2, 60801-84-5
o-cresyl glycidyl ether	2210-79-9, 206126-37-6

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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