

**Nafion™ PFSA 5% Dispersions - D521**

Version 3.0

Revision Date 10/14/2015

Ref. 130000034150

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Nafion™ PFSA 5% Dispersions - D521
Tradename/Synonym : D521

Product Use : Chemical intermediate, For industrial use only.

Restrictions on use : Do not use product for anything outside of the above specified uses
Manufacturer/Supplier : The Chemours Company FC, LLC
1007 Market Street
Wilmington, DE 19899
United States of America

Product Information : 1-844-773-CHEM (outside the U.S. 1-302-773-1000)
Medical Emergency : 1-866-595-1473 (outside the U.S. 1-302-773-2000)
Transport Emergency : CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION**Product hazard category**

Flammable liquids	Category 3
Skin corrosion	Category 1A
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity - single exposure	Category 3

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Label content

Pictogram

:



Signal word

: Danger

Hazardous warnings

: Flammable liquid and vapour.
Causes severe skin burns and eye damage.
May cause respiratory irritation.
May cause drowsiness or dizziness.



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Hazardous prevention measures

: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing.
Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Wash contaminated clothing before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

Before using, read the product bulletin.

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity: 5.2 %

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Propan-1-ol	71-23-8	47.9 %
Ethanol	64-17-5	3.84 %

SECTION 4. FIRST AID MEASURES

- General advice : Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
- Inhalation : Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. Artificial respiration and/or oxygen may be necessary. If breathing is difficult, give oxygen. Call a physician.
- Skin contact : Wash off immediately with plenty of water. Wash contaminated clothing before reuse.
- Eye contact : Rinse immediately with plenty of water and seek medical advice.
- Ingestion : Do NOT induce vomiting. If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. Clean mouth with water and drink afterwards plenty of water.
- Most important symptoms/effects, acute and delayed : No applicable data available.



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Protection of first-aiders : If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Notes to physician : Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances. Activated charcoal may be given but should be used with caution since it may induce vomiting.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Foam, Dry chemical, Carbon dioxide (CO2)

Unsuitable extinguishing media : Water may be ineffective because of low flash point.

Specific hazards : Vapours may form explosive mixtures with air. Vapours or gases may travel considerable distances to ignition source and flash back. Hazardous combustion products: Hydrogen fluoride acid fluorides Carbonyl difluoride

Special protective equipment for firefighters : Wear self-contained breathing apparatus (SCBA). Wear suitable protective equipment.

Further information : Evacuate personnel and keep upwind of fire. Cool containers/tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Evacuate personnel to safe areas. Ventilate the area. Wear self-contained breathing apparatus and protective suit. Refer to protective measures listed in sections 7 and 8.

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- Environmental precautions : Prevent material from entering sewers, waterways, or low areas. Should not be released into the environment.
- Spill Cleanup : Remove all sources of ignition. Dike spill. Recover undamaged and minimally contaminated material for reuse and reclamation. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Dispose of in an approved container.
- Accidental Release Measures : No applicable data available.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. For personal protection see section 8. Ensure all equipment is electrically grounded before beginning transfer operations. Use of non-sparking and explosion-proof equipment may be necessary depending on type of operation. Keep away from fire, sparks and heated surfaces. Keep container closed.
- Handling (Physical Aspects) : Vapours may form explosive mixtures with air. The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. No sparking tools should be used. Take measures to prevent the build up of electrostatic charge. When transferring from one container to another apply earthing measures and use conductive hose material. Keep away from heat and sources of ignition. Keep away from open flames, hot surfaces and sources of ignition. When using do not smoke.
- Dust explosion class : No applicable data available.
- Storage : Store in a well-ventilated area away from heat and sunlight. Store in a cool, dark place. Keep tightly closed. Protect from contamination. Stable at normal ambient temperature and pressure.
- Storage period : No applicable data available.
- Storage temperature : No applicable data available.



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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Engineering controls : Use sufficient ventilation to keep employee exposure below recommended limits.
- Personal protective equipment
- Respiratory protection : When ventilation is inadequate to maintain concentrations below exposure limits, use a positive pressure air supplied respirator.
- Hand protection : Material: butyl-rubber
Glove thickness: 16 - 32 mm
Additional protection: Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
- Eye protection : Wear safety glasses or coverall chemical splash goggles.
- Skin and body protection : Where there is potential for skin contact, have available and wear as appropriate, impervious gloves, apron, pants, jacket, hood and boots.
- Protective measures : When using do not smoke.

Exposure Guidelines Exposure Limit Values

Propan-1-ol Permissible exposure limit: TLV	(OSHA)	200 ppm	500 mg/m ³	8 hr. TWA
	(ACGIH)	100 ppm	TWA	
Ethanol Permissible exposure limit: TLV	(OSHA)	1,000 ppm	1,900 mg/m ³	8 hr. TWA
	(ACGIH)	1,000 ppm	STEL	

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : liquid
Form : liquid
Color : clear, colourless, to, light yellow

Odor : alcohol-like

Odor threshold : No applicable data available.

pH : ca. 1 - 3

Melting point/range : No applicable data available.

Boiling point/boiling range : No applicable data available.

Flash point : 24 °C
closed cup
Method: Pensky-Martens closed cup - PMCC

Evaporation rate : No applicable data available.

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : No applicable data available.

Lower explosion limit : No applicable data available.

Vapour Pressure : No applicable data available.

Vapour density : No applicable data available.

Density : 0.92 - 0.94 g/cm³

Specific gravity (Relative density) : No applicable data available.

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Water solubility	: completely soluble
Solubility(ies)	: No applicable data available.
Partition coefficient: n-octanol/water	: No applicable data available.
Auto-ignition temperature	: No applicable data available.
Ignition temperature	: 363 °C (for a component of this mixture)
Decomposition temperature	: No applicable data available.
Viscosity, kinematic	: No applicable data available.
Viscosity, dynamic	: No applicable data available.
% Volatile	: 94 - 95 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable under recommended conditions of storage, use and temperature. Stable at normal temperatures and storage conditions.
Possibility of hazardous reactions	: No applicable data available.
Conditions to avoid	: Heat, flames and sparks. Will react with most metals, releasing potentially explosive hydrogen gas.
Incompatible materials	: Acids Oxidizing agents, acid halides, alkaline metals
Hazardous decomposition products	: Decomposes with heat., Hazardous thermal decomposition products:, alcohol fumes, Carbonyl fluoride, Hydrogen fluoride, acid fluorides

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SECTION 11. TOXICOLOGICAL INFORMATION

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Skin irritation : Non-corrosive

Propan-1-ol

Inhalation 4 h LC50 : > 33.8 mg/l , Rat
Target Organs: Central nervous system
Central nervous system effects

Dermal LD50 : 4,032 mg/kg , Rabbit

Oral LD50 : 5,400 mg/kg , Rat

Eye irritation : Risk of serious damage to eyes., Rabbit

Skin sensitization : Does not cause skin sensitisation., Mouse

Mutagenicity : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Reproductive toxicity : No toxicity to reproduction
Evidence suggests the substance is not a reproductive toxin in animals.

Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Ethanol

Inhalation 4 h LC50 : 124.7 mg/l , Rat
VapourOral LD50 : 10,470 mg/kg , Rat
Narcotic effects

Eye irritation : Eye irritation, Rabbit

Skin sensitization : Does not cause skin sensitisation., Mouse

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- Repeated dose toxicity : Oral
Rat
-
No toxicologically significant effects were found.
- Inhalation
Rat
-
No toxicologically significant effects were found.
- Carcinogenicity : Not classifiable as a human carcinogen.
Overall weight of evidence indicates that the substance is not carcinogenic.
- Mutagenicity : Animal testing did not show any mutagenic effects.
Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- Reproductive toxicity : No toxicity to reproduction
Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.
- Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity



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Propan-1-ol

96 h LC50	:	Poecilia reticulata (guppy) 4,555 mg/l
48 h NOEC	:	Algae 1,150 mg/l
48 h EC50	:	Daphnia magna (Water flea) 3,644 mg/l
21 d	:	NOEC Daphnia magna (Water flea) > 100 mg/l

Ethanol

96 h LC50	:	Pimephales promelas (fathead minnow) 14,200 mg/l
96 h ErC50	:	Pseudokirchneriella subcapitata (green algae) 675 mg/l OECD Test Guideline 201
48 h EC50	:	Daphnia magna (Water flea) 5,012 mg/l
30 d	:	NOEC Fish (unspecified species) 245 mg/l

Additional ecological information : No data is available on the product itself.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Preferred option for disposal is to separate solids from liquid by precipitation and decanting or filtering. Dispose of dry solids in a landfill that is permitted, licensed or registered by a state to manage industrial solid waste. Discharge liquid filtrate to a wastewater treatment system. Incinerate only if incinerator is capable of scrubbing out hydrogen fluoride and other acidic combustion products. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations. May be a RCRA Hazardous waste due to the ignitability characteristic.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

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SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 1993
	Proper shipping name	: Flammable liquids, n.o.s. (n-Propanol, Ethanol)
	Class	: 3
	Packing group	: III
	Labelling No.	: 3
	Reportable Quantity	: n-Propanol
IATA_C	UN number	: 1993
	Proper shipping name	: Flammable liquid, n.o.s. (n-Propanol, Ethanol)
	Class	: 3
	Packing group	: III
	Labelling No.	: 3
IMDG	UN number	: 1993
	Proper shipping name	: FLAMMABLE LIQUID, N.O.S. (n-Propanol, Ethanol)
	Class	: 3
	Packing group	: III
	Labelling No.	: 3

SECTION 15. REGULATORY INFORMATION

TSCA	: On the inventory, or in compliance with the inventory
SARA 313 Regulated Chemical(s)	: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
PA Right to Know Regulated Chemical(s)	: Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Ethanol, Propan-1-ol

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NJ Right to Know Regulated Chemical(s)	: Substances on the New Jersey Workplace Hazardous Substance List present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens or teratogens): Ethanol, Propan-1-ol
CERCLA Reportable Quantity	: 209 lbs Based on the percentage composition of this chemical in the product.: Propan-1-ol
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Restrictions for use : Do not use Chemours materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from Chemours under a written contract that is consistent with Chemours policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your Chemours representative. You may also request a copy of the Chemours POLICY Regarding Medical Applications and Chemours CAUTION Regarding Medical Applications.

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Chemours™ and the Chemours Logo are trademarks of The Chemours Company.
Consult the technical guidelines for the use of this substance/mixture.

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.



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