

NEXT 5408

SAFETY DATA SHEET

Preparation Date: February 1, 2023 Revision 3 - Replaces June 18, 2020

1. Product and Company Identification

Product Name: *Next 5408* - US Patent No. 10,829,722
International Patent Applied For
Identified Uses: Patented Precision Cleaning Solvent - **INDUSTRIAL USE ONLY. NOT FOR CONSUMER SALE OR USE.**
Supplier: Enviro Tech International, Inc.
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Melrose Park, IL 60160 708-343-6641
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Emergency Contact: Velocity EHS 24-HR EMERGENCY CONTACT U.S. & Canada, (800) 255-3924 - INTERNATIONAL CALLS: +01-813-248-0585. Non-Emergency (708) 344-6641 Hours: Mon-Fri 8am-4pm CST

2. Hazard Identification

This product has no flash point and is non-flammable per OSHA and DOT regulations. This product does exhibit flammable limits in a range of vapor to air concentration of 4.9% to 13.5% (estimated) and may flash if exposed to a high energy ignition source while the vapor/air mixture in in this range.

Signal Word: Warning

Classification

Skin irritation	Category 2
Eye irritation	Category 2B
Specific target organ toxicity (single exposure)	Category 3
Ingestion (Acute Toxicity)	Category 4
Aquatic Toxicity	Category 4

Hazard Statements

H332 Harmful if inhaled
H302 Harmful if swallowed
H313 May be harmful in contact with skin
H315 Causes skin irritation
H320 Causes eye irritation
H332 Harmful if inhaled
H336 May cause drowsiness or dizziness.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements

P102 Keep out of reach of children
P103 Read label before use
P233 Keep container tightly closed
P234 Keep only in original container
P202 Do not handle until all safety precautions have been read and understood
P262 Do not get in eyes, on skin, or on clothing
P271 Use in a well-ventilated area

- P273 Avoid release to the environment
- P261 Avoid breathing vapor/spray
- P280 Wear protective gloves/eye protection/face protection
- P281 Use personal protective equipment as required.

Response

- P308 + P314 IF EXPOSED: Get medical advice/attention if you feel concerned.
- P305 + P351 + P338 + P337 + P313 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
- P302 + P361 + P352 + P353 + P363 IF ON SKIN: remove immediately all contaminated clothing. Wash with soap and water. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
- P333 + P313 P304 + P340 + P342 + P311 IF INHALED: Remove individual to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
- P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
- P306 + P361 + P363 IF ON CLOTHING: Remove immediately all contaminated clothing. Wash contaminated clothing.

Storage & Disposal:

- P403 + P233 + P235 + P404 + P233 Store in well-ventilated place. Keep container tightly closed. Keep Cool.
- P501 Dispose of contents/containers in accordance with all local/regional/national/international regulations.

3. Composition

Chemical Name	CAS/EC Number	% by weight
1,1,1,3,3-Pentafluorobutane Synonym: HFC-365mfc Molecular Formula: C4H5F5	CAS 406-58-6 EC 430-250-1	50 - 70%
1,2 trans-dichloroethylene Synonym: trans-Acetylene dichloride; 1, 2-dichloroethylene Molecular Formula: C2H2Cl2	CAS 156-60-5 EC 205-860-2	25 - 50%
Proprietary Chemical Compound		1 - 8%

Specific components and/or amounts of components comprise Trade Secrets per 1920.1200(i)(1)

4. First Aid Measures

- Inhalation Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention if any discomfort continues.
- Ingestion Do not induce vomiting. Never give liquid to an unconscious person.
- Skin Contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.

Eye Contact Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5. Fire Fighting Measures

Flash point (0 C) None - ASTM 56
Flammable Limits 4.9% to 13.5% (estimated) vapor to air concentration if exposed to a high energy ignition source.
Extinguishing Media Use extinguishing measures appropriate to local circumstances and surroundings.
Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.
Hazardous combustion products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases/vapors such as gaseous hydrogen fluoride (HF).
Special Fire Fighting Procedures Avoid breathing fire vapors. Keep run-off water out of sewers and water sources. Dike for water control.
Protective Equipment Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental Release Measures

Personal Precautions Wear protective clothing as described in Section 8 of this Safety Data Sheet.
Environmental Precautions Do not discharge into drains, water courses or onto the ground. Contain spillages with sand, earth or any suitable adsorbent material.
Spill Clean Up Methods Provide ventilation and confine spill. Do not allow runoff to sewer or waterways. Dam and absorb spillage with sand, sawdust or other absorbent. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.
Reference to other Sections For personal protection, see Section 8. For waste disposal, see Section 13.

7. Handling and Storage

Handling Avoid skin and eye contact. Avoid inhalation of vapors and spray mists. Use with sufficient ventilation. In use, may form flammable/explosive vapor-air mixture.
Storage Store in tightly closed original container in a dry, cool and well-ventilated place.

8. Exposure Control and Personal Protection

Component	CAS Number	Exposure Limits
1,1,1,3,3-Pentafluorobutane	CAS 406-58-6	N/A
1,2 trans-dichloroethylene	CAS 156-60-5	OSHA PEL 200 ppm
Proprietary Chemical Compound		50 ppm 8h-TWA Manufacturer Recommended Exposure Limit

Engineering Controls	Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Vapors are heavier than air. Use with adequate ventilation to prevent vapor buildup in low lying areas.
Protective	
Process Conditions	Provide eyewash, quick drench.
Respiratory Equipment	Suitable respiratory protection should be provided if exposure limits may be or are exceeded. Self-contained breathing apparatus is required if a large spill occurs.
Hand Protection	Always use Viton or neoprene gloves for long term protection. Nitrile gloves are acceptable only for splash protection.
Eye Protection	Wear approved safety goggles.
Hygiene Measures	When using do not eat, drink or smoke. Wear apron or protective clothing in case of splashes.
Skin Protection	Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly with soap & water if skin becomes contaminated.

9. Physical and Chemical Properties

Appearance	Liquid, Colorless
Initial boiling point	34.4° C
Relative Density	1.255 @ 25° C
Viscosity	0.41 cPs
Flash Point	None. ASTM 56
Flammable Limits LEL/UEL	4.9 % / 13.5% (estimated Based on 1,2 trans-dichloroethylene)

10. Stability and Reactivity

Stability	Stable under normal temperature conditions and recommended use. Forms an azeotrope and will not flash.
Conditions to Avoid	Avoid heat, flames and other sources of ignition. Does not support combustion and will decompose when exposed to extreme conditions of heat at elevated temperatures, naked flames or incompatible materials.
Materials to Avoid	Strong oxidizing substances. Incompatible with alkali or alkaline earth metals-powdered Al, Zn, Be, etc.
Hazardous Decomposition Products	Thermal decomposition or combustion may liberate carbon oxides, hydrochloric and hydrofluoric acids, possibly carbonyl halides and other toxic gases or vapors.

11. Toxicological Information

1,2 trans-dichloroethylene

LD ₅₀ Oral Rat:	1,235 mg/kg
LD ₅₀ Oral Mouse:	2,122 mg/kg Remarks: Behavioral: Altered sleep time/change in righting reflex. Behavioral Somnolence (general depressed activity). Behavioral -Ataxia.
LC ₅₀ Inhalation Rat	24,100 ppm Remarks: Behavioral: Somnolence (general depressed activity). A 90 day inhalation study in rats reported no adverse effects on body weight, clinical observations, food consumption, clinical or anatomical pathology parameters, or liver cell proliferation and an NOEL of 4,000 ppm.

LD ₅₀ Dermal Rabbit	> 5,000 mg/kg Remarks: Prolonged skin contact may cause dermatitis.
Skin Rabbit	Skin irritation - 24 h.
Eyes Rabbit	Eye irritation
Carcinogenicity	Not listed in IARC, NTP or OSHA
Mutagenesis	Not mutagenic to E-coli or S. Typhimurium when tested with microsomal activation. Did not produce mutations in Saccharomyces cerevisiae with or without microsomal activation. No genetic effects were reported in a vivo host mediated mutagenic assay.
Developmental Toxicity	In an inhalation study in rats, significant fetal toxicity was observed only at maternally toxic concentrations (12,000 ppm). Based on the results of this study, trans-1, 2-dichloroethylene would not be considered to be a developmental toxicant.

1,1,1,3,3-Pentafluorobutane

Acute oral toxicity	LD ₅₀ : > 2,000 mg/kg - Rat
Acute inhalation toxicity	LC ₅₀ - 4 h : > 100000 ppm - Rat
Skin corrosion/irritation	Rabbit - none
Serious eye damage/eye irritation	Rabbit - None
Respiratory or skin sensitization	Guinea Pig - None
Genotoxicity in vitro	Did not show mutagenic effects
Genotoxicity in vivo	Did not show mutagenic effects
Ames Assay	Negative (OECD 471 & 472) Chromosomal Aberration Test: Negative (CHL Cell) (OECD 473)
Asphyxiation Hazard	Simple asphyxiant
Acute dermal toxicity administration)	No data available Acute toxicity (other routes of No data available
Toxicity to reproduction/fertility	NOAEC parent: 29,971ppm.
Effects on fertility	NOAEC parent: 29,971 ppm Developmental Toxicity

Proprietary Chemical Compound

Acute Toxicity

Oral LD ₅₀ (rat)	>2000mg/kg
Inhalation LC ₅₀ (rat)	>24.8mg/L (301 Oppm)
Dermal LD ₅₀ (rat)	>2000mg/kg
Skin and eye irritation	Slight irritation to eye and mucous membranes
Skin irritation (rabbit)	None
Eye irritation (rabbit)	Slight
Sensitization: Skin (rat)	None
Genetic Studies	Ames Assay: Negative (OECD 471 & 472) Chromosomal Aberration Test: Negative (CHL Cell) (OECD 473) Repeated Dose Oral Toxicity (28 Day): NOEL 1,00mg/kg/d
Repeated Dose Inhalation Toxicity (5 day)	NOEL 1800 ppm Rats exposed to 2500 or 5000 ppm for 6 hours per day for 5 days showed convulsions.
Repeated Dose Inhalation Toxicity (90 day)	NOEL 1,000 ppm Rats exposed to 1,000 ppm for 6 hours per day, 5 days per week for 90 days showed no adverse effects.

NEXT 5408 Mixture:

IARC: Carcinogenicity: Isopropyl Alcohol Group 3

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

12. Ecological Information

1,2 trans-dichloroethylene

Invertebrate Toxicity:	<110,000 ug/L 48 hour(s) (Mortality) Water flea (Daphnia magna)
Persistence and degradability	No data available
Bioaccumulative potential	No data available
Mobility in soil	No data available
Results of PBT & vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
USEPA SNAP	Acceptable
Other adverse effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal

1,1,1,3,3-Pentafluorobutane

Biodegradability	Not biodegraded (OECD 301 C) N/D
Bioaccumulation	N/D
Activated Sludge Study	100mg/L (OECD 209)
Fish Toxicity	LC ₅₀ (96hr) (Carp): >76 mg/L
Algal growth inhibition	ErC ₅₀ >213mg/L EbC ₅₀ >213mg/L.
Mobility inhibition (Daphnia magna)	48hr-EC ₅₀ >94mg/L
Acute toxicity to fish	LC ₅₀ - 96 h : > 200 mg/l - Brachydanio rerio (zebrafish) LC ₅₀ - 96 h : ca. 200 mg/l - Brachydanio rerio (zebrafish) LC ₅₀ - 96 h : 450 mg/l - Fishes, Salmo gairdneri semi-static test Fresh water LC ₅₀ - 96 h : > 100 mg/l - Oncorhynchus mykiss (rainbow trout) semi-static test
Acute toxicity to daphnia and other aquatic invertebrates	EC ₅₀ - 48 h : 980 mg/l - Daphnia magna (Water flea)
Toxicity to aquatic plants	NOEC - 72 h : 13.2 mg/l - Selenastrum capricornutum (green algae) static test Fresh water EC ₅₀ - 72 h : > 114 mg/l - Selenastrum capricornutum (green algae) static test Fresh water
Chronic toxicity to fish	NOEC: ca. 38.2 mg/l - 30 Days - Pimephales promelas (fathead minnow)
Toxicity to terrestrial plants	NOEC: >= 6,000 g/l Endpoint: Growth rate Stability in water: Hydrolysis not significant, Medium, Water, Soil, Photolysis. Not significant, Medium, Water
Photodegradation	Indirect photo-oxidation. Half-life indirect photolysis: ca. 10.8 y Air
Biodegradability	Aerobic. Method: ready biodegradability/MITI 2 % - 28 Days. Not readily biodegradable.
Bioconcentration factor (BCF)	Does not bioaccumulate.
Adsorption potential (Koc)	Adsorption. Soil/sediments Koc: ca. 9 not significant
Results of PBT & vPvB assessment	No data available

USEPA SNAP:	Components approved as substitutes for ozone depleting substances
Acute aquatic toxicity	Low toxicity for aquatic organisms

Proprietary Chemical Compound

Biodegradability	Not biodegraded (OECD 301 C)
Bioaccumulation	N/D
Activated Sludge Study	>100mg/L (OECD 209)
Fish Toxicity	LC ₅₀ (96 hr) (Carp) >76 mg/L
Other Information	Algal growth inhibition: ErC ₅₀ >213mg/L EbC ₅₀ >213mg/L
Mobility inhibition: (Daphnia magna)	48hr-EC ₅₀ >94mg/L
USEPA SNAP:	Acceptable

13. Disposal Considerations

Disposal Methods: Dispose of waste and residues in accordance with federal, state and local authority requirements. Confirm disposal procedures with environmental engineer and local regulations. Do not allow runoff into sewer, waterway or ground. Do not reuse containers.

14. Transportation Information

General	This product is not hazardous for transportation per USA DOT regulations and is not covered by international regulations on the transport of dangerous goods (IMDG, IATA).
Proper Shipping Name	General Cleaning Solvent

The above transportation information is valid as of the date of publication of this SDS. Given that regulatory changes are made on an ongoing basis, ETI recommends checking new transportation regulations regularly.

15. Regulatory Information

1,2 trans-dichloroethylene

USA TSCA	Listed in Inventory. Active.
USA SARA 302	None
USA SARA 313/3112	Not subject to the reporting
Right To Know	Massachusetts, Pennsylvania, New Jersey,
California Directors List of Hazardous Substances:	Listed
USEPA SNAP	Components Approved
USA CERCLA	Reportable quantity - 1,000 LBS
ROHS3	Complies
REACH	EC 205-860-2
Europe EINECS	Listed in inventory listed on or meet the polymer definition. (205-860-2)
Canada - DSL	Listed in Inventory
Australia - AICS	Listed in Inventory
Korea - KECI	Listed in Inventory
Japan Miti - ENCS	Listed in Inventory
Philippines PICCS	One or more components not listed. This product can only be used in R&D applications.

1,1,1,3,3-Pentafluorobutane

US - TSCA	Listed in Inventory. Active.
USA SARA 302	None
USA SARA 313/312	Not subject to the reporting.
USEPA SNAP	Components Approved
ROHS3	Complies
REACH	Listed in Inventory
Mexico INSQ	Listed in Inventory
Canada – DSL	Listed in Inventory
Japan – CSCL	Listed in Inventory
Korea - KECI	Listed in Inventory
China - ECSC	Listed in Inventor
Australia - AICS	Listed in Inventory
New Zealand Inventory of Chemical Substances	In compliance with Inventory
Philippines - PICCS	One or more components not listed in inventory

Proprietary Chemical Compound

USA SARA 313/312	Not subject to the reporting.
USA SARA 302	N/A
USA CERCLA	Not regulated
USEPA SNAP	Acceptable
USA TSCA	Listed in Inventory. Active.
GLOBAL WARMING	GWP: 580
CANADA DSL	Listed
EINECS/ELINCS	Listed in Inventory
ENCS	Listed in Inventory
CHINA - IECSC	Listed in Inventory
KOREA - KECI	Does Not Comply
ROHS-3	Complies
REACH	Listed in Inventory
PHILIPPINES PICCS	Does Not Comply
NICNAS	Does Not Comply

16. Other Information

Only trained personnel should use this material. Since empty containers retain product residue, follow label warnings, even after container is emptied. Each user of this product should study this SDS carefully and consult appropriate expertise as necessary to become aware of and understand the data contained in this SDS and any hazards that may be associated with this product. The information provided in this Safety Data Sheet relates only to the specific material designated herein. The user is responsible for determining the conditions of safe use of this product and for complying with all Federal, State and Local governmental laws and regulations concerning its use. Enviro Tech International, Inc. makes no warranty, express or implied, including the warranty of merchantability and fitness for a particular purpose, and assumes no liability or responsibility for the accuracy, completeness, timeliness or usefulness of this information. Enviro Tech International, Inc assumes no liability for any damages incurred, whether directly or indirectly, as a result of any errors, omissions or discrepancies in this information. Enviro Tech International, Inc. assumes no liability for reliance on this data and assumes no liability for damages related to the use or misuse of this product.

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