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Revision 7
Supersedes Date 03/04/2015

SAFETY DATA SHEET

Dura II A/C Flush Solvent

1. IDENTIFICATION

Product Name	Dura II A/C Flush Solvent
Product No.	69991, 69992, 409889, A99889
Identified uses	Cleaning agent.
Supplier	Four Seasons 1801 Waters Ridge Drive Lewisville, TX 75057
Contact Person	techsupport@microcare.com
Manufacturer	MicroCare Corporation 595 John Downey Drive New Britain, CT 06051 United States of America Toll Free: 1 (800) 638-0125 Telephone: 1-(860) 827-0626 Website: www.MicroCare.com email: techsupport@microcare.com
Emergency Telephone	CHEMTREC (800) 424-9300

2. HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW

Colourless liquid. Slight odor. Ether. This product is not flammable. May irritate eyes and skin. Gas or vapor displaces oxygen available for breathing (asphyxiant). No specific ventilation requirements noted, except this product must not be used in a confined space without good ventilation. Keep out of the reach of children.

Appearance	Clear liquid.
Color	Colourless.
Odor	Slight odor. Ether
GHS Pictogram	



Signal Word Warning

Hazard Statements	H332 Harmful if inhaled.
	H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements	P102 Keep out of reach of children.
	P271 Use only outdoors or in a well-ventilated area.
	P501 Dispose of contents/container in accordance with local regulations.

Contains trans-DICHLOROETHYLENE

GHS Classification	Physical and Chemical Hazards	Not classified.
	Human health	Acute Tox. 4 - H332
	Environment	Aquatic Chronic 3 - H412

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS

WHMIS Label

Dura II A/C Flush Solvent

Materials Causing Other
Toxic Effects.

Controlled Product Classification

Canadian WHMIS Classification D2 WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (CPR SECTION (33)) This product has been classified according to the hazard criteria of the Controlled Product Regulations, and the MSDS contains all required information.

OSHA Regulatory Status

This Product is Hazardous under the OSHA Hazard Communication Standard.

Human Health

Prolonged skin contact may cause redness, irritation and dry skin. Mild dermatitis, allergic skin rash.

Inhalation

Vapors may irritate the respiratory system and cause coughing, asthmatic breathing and breathlessness.

Ingestion

May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication.

Skin Contact

Acts as a defatting agent on skin. May cause cracking of skin, and eczema.

Eye Contact

May cause temporary eye irritation.

Medical Symptoms

High concentrations of vapors may irritate respiratory system and lead to headache, fatigue, nausea and vomiting.

Environment

The product contains a substance which is harmful to aquatic organisms and which may cause long term adverse effects in the aquatic environment.

Physical And Chemical Hazards

Vapors are heavier than air and may travel along the floor and in the bottom of containers. Gas or vapor displaces oxygen available for breathing (asphyxiant).

3. COMPOSITION/INFORMATION ON INGREDIENTS	
1,1,1,2,3,4,4,5,5,5-decafluoropentane	10-30%
CAS No.: 138495-42-8	EC No.: 420-640-8
GHS Classification Aquatic Chronic 3 - H412	
1,1,1,3,3-PENTAFLUOROBUTANE	5-10%
CAS No.: 406-58-6	EC No.: 430-250-1
GHS Classification Flam. Liq. 2 - H225	
DIMETHYL CARBONATE	1-5%
CAS No.: 616-38-6	EC No.: 210-478-4
GHS Classification Flam. Liq. 2 - H225	

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trans-DICHLOROETHYLENE	60-90%
CAS No.: 156-60-5	EC No.: 205-860-2
GHS Classification Flam. Liq. 2 - H225; Acute Tox. 4 - H332; Aquatic Chronic 3 - H412	

Composition Comments

The Data Shown is in accordance with the latest EC Directives.

4. FIRST-AID MEASURES

Description of first aid measures

General Information

NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Place unconscious person on the side in the recovery position and ensure breathing can take place. Perform artificial respiration if breathing has stopped. Consult a physician for specific advice.

Inhalation

Move into fresh air and keep at rest. If respiratory problems, artificial respiration/oxygen. Get medical attention.

Ingestion

Never give liquid to an unconscious person. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Place unconscious person on the side in the recovery position and ensure breathing can take place. Get medical attention immediately!

Skin Contact

Promptly flush contaminated skin with soap or mild detergent and water. Promptly remove clothing if penetrated and flush the skin with water. Contact physician if irritation continues.

Eye Contact

Promptly wash eyes with plenty of water while lifting the eye lids. Make sure to remove any contact lenses from the eyes before rinsing. Continue to rinse for at least 15 minutes and get medical attention.

Most important symptoms and effects, both acute and delayed

General Information

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. When working extensively on big surfaces in small and badly ventilated rooms, vapors may develop in concentrations which may cause malaise such as headache, dizziness and nausea.

Inhalation

May cause an asthma-like shortness of breath. Vapors may cause headache, fatigue, dizziness and nausea. Arrhythmia, (deviation from normal heart beat).

Ingestion

Pulmonary oedema, frothy sputum.

Skin Contact

Skin irritation. Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping.

Eye Contact

May cause temporary eye irritation. Irritating and may cause redness and pain.

Indication of any immediate medical attention and special treatment needed

Notes To The Physician

No recommendation given, but first aid may still be required in case of accidental exposure, inhalation or ingestion of this chemical. If in doubt, GET MEDICAL ATTENTION PROMPTLY!

5. FIRE-FIGHTING MEASURES

Flammability Class

This product is not flammable. TCC (Tag closed cup).

Flammability Limit - Lower(%) 4.3

Flammability Limit - Upper(%) 13.5

Extinguishing Media

This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

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Unsuitable extinguishing media

Water spray. Never use water by itself on spillage; this will spread the spill and cause further contamination.

Hazardous combustion products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. Fire creates: Carbonyl compounds. Chlorides.

Unusual Fire & Explosion Hazards

Closed containers can burst violently when heated, due to excess pressure build-up.

Specific Hazards

Avoid contact with naked flames and hot surfaces as corrosive and toxic decomposition products can be formed.

Special Fire Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

Protective Equipment For Fire-Fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions

Warn everybody of potential hazards and evacuate if necessary. Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Do not smoke, use open fire or other sources of ignition. Follow precautions for safe handling described in this material safety data sheet. For personal protection, see section 8.

Environmental Precautions

Contain spillages with sand, earth or any suitable adsorbent material. Avoid release to the environment.

Spill Clean Up Methods

Large quantities should not be discharged into the drain but removed with absorbing material. Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage with shovel, broom or the like and reuse, if possible. Dispose of large amounts of spillage/waste according to agreement with local authorities. Neoprene gloves are recommended.

Reference to other sections

For personal protection, see section 8. See section 11 for more detailed information on health effects and symptoms. For waste disposal, see section 13.

7. HANDLING AND STORAGE

Handling

Provide good ventilation. Avoid inhalation of vapors/spray and contact with skin and eyes.

Storage

Store in tightly closed original container in a dry, cool and well-ventilated place.

Storage Class

Unspecified storage. This product is not flammable.

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

COMPONENT	STD	TWA (8-hrs)		STEL (15 min)		Notes
1,1,1,2,3,4,4,5,5,5-decafluoropentane	SUP	200 ppm				
1,1,1,3,3-PENTAFLUOROBUTANE	SUP	1000 ppm				
trans-DICHLOROETHYLENE	ACGIH	200 ppm				

ACGIH=American Conference of Governmental Industrial Hygienists.

Ingredient Comments

WEL = Workplace Exposure Limits

Protective Equipment



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Engineering Measures

No specific ventilation requirements noted, except this product must not be used in a confined space without good ventilation.

Respiratory Equipment

Vapors are heavier than air and may travel along the floor and in the bottom of containers. At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used. Self-contained breathing apparatus with full facepiece.

Hand Protection

For prolonged or repeated skin contact use suitable protective gloves. Gloves of nitrile rubber, PVA or Viton are recommended.

Eye Protection

Wear approved, tight fitting safety glasses where splashing is probable. If risk of splashing, wear safety goggles or face shield.

Other Protection

Wear suitable protective clothing as protection against splashing or contamination.

Hygiene Measures

Avoid inhalation of spray mist and contact with skin and eyes. When using do not eat, drink or smoke. Wash hands at the end of each work shift and before eating, smoking and using the toilet.

Skin Protection

Wear apron or protective clothing in case of splashes.

Thermal hazards

Avoid contact with naked flames and hot surfaces as corrosive and toxic decomposition products can be formed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear liquid.
Color	Colourless.
Odor	Slight odor. Ether
Solubility	Slightly soluble in water.
Initial boiling point and boiling range	41 C / 106 F (estimated)
Vapor density (air=1)	3.4
Vapor pressure	5.5 psia 20 C / 77 F
Evaporation rate	>1 (EtOH=1)
Flammability Limit - Lower(%)	4.3
Flammability Limit - Upper(%)	13.5
Volatility Description	Volatile
Volatile By Vol. (%)	100
Flammability	This product is not flammable.

10. STABILITY AND REACTIVITY

Reactivity

Reacts strongly with alkaline metals and metal powder.

Stability

Stable under normal temperature conditions and recommended use.

Hazardous Polymerisation

Will not polymerise.

Conditions To Avoid

Avoid contact with naked flames and hot surfaces as corrosive and toxic decomposition products can be formed.

Materials To Avoid

Alkali metals. Alkali earth metals. Powdered metal.

Hazardous Decomposition Products

When heated, toxic and corrosive vapors/gases may be formed. Halogenated hydrocarbons. Hydrogen fluoride (HF). Carbon dioxide (CO₂). Carbon monoxide (CO).

11. TOXICOLOGICAL INFORMATION

Toxicological information

No information available.

Toxicological Information on Ingredients:

Dura II A/C Flush Solvent
DIMETHYL CARBONATE (CAS: 616-38-6)

Toxic Dose 1 - LD 50

12, 900 mg/kg (oral rat)

Toxic Dose 2 - LD 50

6, 000 mg/kg (oral-mouse)

trans-DICHLOROETHYLENE (CAS: 156-60-5)

Toxic Dose 1 - LD 50

1235 mg/kg (oral rat)

Toxic Dose 2 - LD 50

>5000 mg/kg (oral-rbt)

Toxic Conc. - LC 50

24100 ppm/4h (inh-rat)

Other Health Effects

This substance has no evidence of carcinogenic properties.

1,1,1,3,3-PENTAFLUOROBUTANE (CAS: 406-58-6)

1,1,1,2,3,4,4,5,5,5-decafluoropentane (CAS: 138495-42-8)

Toxic Dose 1 - LD 50

>5, 000 mg/kg (oral rat)

Toxic Conc. - LC 50

11, 100 ppm/4h (inh-rat)

12. ECOLOGICAL INFORMATION

Ecotoxicity

The product contains a substance which is toxic to aquatic organisms and which may cause long term adverse effects in the aquatic environment.

Acute Fish Toxicity

Very toxic to aquatic organisms.

Degradability

No data available.

Bioaccumulative potential

No data available on bioaccumulation.

Mobility:

No data available.

Results of PBT and vPvB assessment

This product does not contain any PBT or vPvB Substances. No data available.

Other adverse effects

The product contains substances which contribute to global warming (greenhouse effect).

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Ecological Information on Ingredients:

DIMETHYL CARBONATE (CAS: 616-38-6)

Acute Fish Toxicity

Not considered toxic to fish.

Degradability

The product is biodegradable.

Ecotoxicity

Low acute toxicity to aquatic organisms.

LC 50, 96 Hrs, Fish mg/l

1350

EC 50, 48 Hrs, Daphnia, mg/l

220

Degradability

No data available.

Bioaccumulative potential

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Mobility:

The product has poor water-solubility.

1,1,1,2,3,4,4,5,5,5-decafluoropentane (CAS: 138495-42-8)

Ecotoxicity

It is unlikely that the substance will dissolve in water in amounts big enough to have a toxic effect on fish and daphnies.

LC 50, 96 Hrs, Fish mg/l

27.2

Degradability

The product is not expected to be biodegradable.

Bioaccumulative potential

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

IC 50, 72 Hrs, Algae, mg/l

120

13. DISPOSAL CONSIDERATIONS

Waste Management

Refer to manufacturer/supplier for information on recovery/recycling. Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority.

Disposal Methods

Dispose of waste and residues in accordance with local authority requirements. Recover and reclaim or recycle, if practical.

14. TRANSPORT INFORMATION

General	Not regulated. The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, DOT).
DOT Proper Shipping Name	Non Regulated Liquid Cleaning Compound NOS
DOT Hazard Class	
Not regulated.	
Transport Labels	
	No transport warning sign required.
DOT Pack Group	N/A
Environmentally Hazardous Substance/Marine Pollutant	
No.	

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Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC Code Notes

Not applicable. No information required.

15. REGULATORY INFORMATION

Regulatory Status (US)

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

Regulatory References

NFPA30 Flammable and Combustible Liquids Code.

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None of the ingredients are listed.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

The following ingredients are listed.

trans-DICHLOROETHYLENE; 1, 000 lbs (454 Kg)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed.

SARA 313 Emission Reporting

None of the ingredients are listed.

CAA Accidental Release Prevention

None of the ingredients are listed.

SARA (311/312) Hazard Categories

Acute

OSHA Highly Hazardous Chemicals

None of the ingredients are listed.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

None of the ingredients are listed.

California Air Toxics "Hot Spots" (A-I)

None of the ingredients are listed.

California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed.

Massachusetts "Right To Know" List

The following ingredients are listed.

DIMETHYL CARBONATE

trans-DICHLOROETHYLENE

Rhode Island "Right To Know" List

None of the ingredients are listed.

Minnesota "Right To Know" List

None of the ingredients are listed.

New Jersey "Right To Know" List

The following ingredients are listed.

DIMETHYL CARBONATE

Pennsylvania "Right To Know" List

The following ingredients are listed.

DIMETHYL CARBONATE

trans-DICHLOROETHYLENE

International Inventories

EU - EINECS/ELINCS

The following ingredients are listed.

1, 1, 1, 3, 3-PENTAFLUOROBUTANE

Canada – DSL/NDSL

The following ingredients are listed.

1, 1, 1, 3, 3-PENTAFLUOROBUTANE

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DIMETHYL CARBONATE
trans-DICHLOROETHYLENE

US - TSCA

All ingredients are listed or exempt.

US – TSCA 12(b) Export Notification

None of the ingredients are listed.

Australia - AICS

The following ingredients are listed.

DIMETHYL CARBONATE

Japan – MITI

The following ingredients are listed.

DIMETHYL CARBONATE

Korea - KECI

The following ingredients are listed.

1, 1, 1, 3, 3-PENTAFLUOROBUTANE

DIMETHYL CARBONATE

China - IECSC

The following ingredients are listed.

1, 1, 1, 3, 3-PENTAFLUOROBUTANE

DIMETHYL CARBONATE

Phillippines – PICCS

The following ingredients are listed.

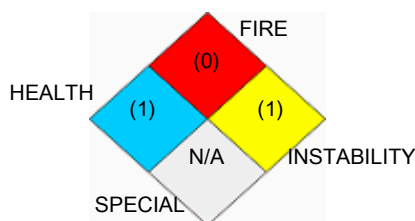
DIMETHYL CARBONATE

16. OTHER INFORMATION

HAZARDOUS MATERIAL INFORMATION SYSTEM (HMIS)

HEALTH	1
FLAMMABILITY	0
PHYSICAL	1
PERSONAL PROTECTION	N/A.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)



Revision Comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision Date	03/04/2015
Revision	7
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Sds No.	BULK_DURA II
Material Safety Data Sheet Status	Approved.
Date	04 March 2015

Disclaimer

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.