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
Dura II A/C Flush Solvent

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

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1,1,2,3,4,4,5,5,5-decafluoropentane</td>
<td>10-30%</td>
</tr>
</tbody>
</table>

**CAS No.: 138495-42-8**  
**EC No.: 420-640-8**

| GHS Classification | Aquatic Chronic 3 - H412 |

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1,1,3,3-PENTAFUOROBUTANE</td>
<td>5-10%</td>
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</table>

**CAS No.: 406-58-6**  
**EC No.: 430-250-1**

| GHS Classification | Flam. Liq. 2 - H225 |

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMETHYL CARBONATE</td>
<td>1-5%</td>
</tr>
</tbody>
</table>

**CAS No.: 616-38-6**  
**EC No.: 210-478-4**

| GHS Classification | Flam. Liq. 2 - H225 |
Dura II A/C Flush Solvent

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.
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

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>STD</th>
<th>TWA (8-hrs)</th>
<th>STEL (15 min)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1,1,2,3,4,4,5,5,5-decafluoropentane</td>
<td>SUP</td>
<td>200 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,1,1,3,3-PENTAFLUOROBUTANE</td>
<td>SUP</td>
<td>1000 ppm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>trans-DICHLOROETHYLENE</td>
<td>ACGIH</td>
<td>200 ppm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ACGIH=American Conference of Governmental Industrial Hygienists.

Ingredient Comments
WEL = Workplace Exposure Limits

Protective Equipment
**Dura II A/C Flush Solvent**

**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.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

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

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### 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**

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### 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-rat)

**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)

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**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).
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.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC 50, 96 Hrs, Fish mg/l</td>
<td>1350</td>
</tr>
<tr>
<td>EC 50, 48 Hrs, Daphnia, mg/l</td>
<td>220</td>
</tr>
</tbody>
</table>

**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.

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

**Ecotoxicity**
Low acute toxicity to aquatic organisms.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC 50, 96 Hrs, Fish mg/l</td>
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</tr>
<tr>
<td>EC 50, 48 Hrs, Daphnia, mg/l</td>
<td>220</td>
</tr>
</tbody>
</table>

**Degradability**
No data available.

**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

**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.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC 50, 96 Hrs, Fish mg/l</td>
<td>27.2</td>
</tr>
</tbody>
</table>

**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.
Dura II A/C Flush Solvent

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.

Massachusetts "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
Dura II A/C Flush Solvent

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)

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL</th>
<th>PERSONAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>1</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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
Supersedes Date 03/04/2015
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.