# SAFETY DATA SHEET Dura II A/C Flush Solvent

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

## 1. Identification

**Product identifier** 

Product name Dura II A/C Flush Solvent

**Product number** 69991, 69992, 409889, A99889

Recommended use of the chemical and restrictions on use

**Application** Cleaning agent.

Details of the supplier of the safety data sheet

**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

CAGE: OATV9

Tel: +1 860-827-0626 Fax: +1 860-827-8105 techsupport@microcare.com

**Emergency telephone number** 

Emergency telephone CHEMTREC (800) 424-9300

## 2. Hazard(s) identification

## Classification of the substance or mixture

Physical hazards Not Classified

Health hazards Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 STOT SE 3 - H336 Asp. Tox. 1 -

H304

**Environmental hazards** Aquatic Chronic 3 - H412

Human health Prolonged or repeated contact with skin may cause irritation, redness and dermatitis. Mild

dermatitis, allergic skin rash.

Environmental The product contains a substance which is harmful to aquatic organisms and which may

cause long-term adverse effects in the aquatic environment.

Physicochemical Vapors are heavier than air and may travel along the floor and accumulate in the bottom of

containers. Gas or vapor displaces oxygen available for breathing (asphyxiant).

## Label elements

#### **Pictogram**





Signal word Danger

## Dura II A/C Flush Solvent

Hazard statements H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness.

H412 Harmful to aquatic life with long lasting effects.

**Precautionary statements** P261 Avoid breathing vapor/ spray.

P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P302+P352 If on skin: Wash with plenty of water.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing.

P331 Do NOT induce vomiting.

P332+P313 If skin irritation occurs: Get medical advice/ attention.
P337+P313 If eye irritation persists: Get medical advice/ attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P501 Dispose of contents/ container in accordance with national regulations.

Supplemental label

information

Safety data sheet available on request. For use in industrial installations only.

Contains trans-DICHLOROETHYLENE

#### Other hazards

This product does not contain any substances classified as PBT or vPvB.

## 3. Composition/information on ingredients

## **Mixtures**

trans-DICHLOROETHYLENE 60-	-100%
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CAS number: 156-60-5

#### Classification

Flam. Liq. 2 - H225 Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2A - H319 STOT SE 3 - H336 Asp. Tox. 1 - H304 Aquatic Chronic 3 - H412

## 1,1,1,2,2,3,4,5,5,5-decafluoropentane

10-30%

CAS number: 138495-42-8

#### Classification

Aquatic Chronic 3 - H412

## **Dura II A/C Flush Solvent**

#### 1.1.1.3.3-PENTAFLUOROBUTANE

5-10%

CAS number: 406-58-6

Classification Flam. Liq. 2 - H225

DIMETHYL CARBONATE 1-5%

CAS number: 616-38-6

Classification Flam. Liq. 2 - H225

The Full Text for all Hazard Statements are Displayed in Section 16.

Composition comments The exact percentage (concentration) of composition has been withheld as a trade secret in

accordance with paragraph (i) of CFR 1900.1200 TSCA: The ingredients of this product are

on the TSCA Inventory.

Composition

#### 4. First-aid measures

#### Description of first aid measures

**General information** Never give anything by mouth to an unconscious person. Do not induce vomiting. Place

unconscious person on the side in the recovery position and ensure breathing can take place.

If breathing stops, provide artificial respiration. Consult a physician for specific advice.

**Inhalation** Move affected person to fresh air and keep warm and at rest in a position comfortable for

breathing. When breathing is difficult, properly trained personnel may assist affected person

by administering oxygen. Get medical attention.

**Ingestion** Never give anything by mouth to an unconscious person. Do not induce vomiting. If vomiting

occurs, the head should be kept low so that vomit does not enter the lungs. Place unconscious person on their side in the recovery position and ensure breathing can take

place. Get medical attention immediately.

**Skin Contact** Wash skin thoroughly with soap and water. Remove contaminated clothing and rinse skin

thoroughly with water. Get medical attention if irritation persists after washing.

Eye contact Remove any contact lenses and open eyelids wide apart. 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 dependent on the concentration and the

length of exposure. Extensive use of the product in areas with inadequate ventilation may result in the accumulation of hazardous vapor concentrations. May cause discomfort. Symptoms following overexposure may include the following: Headache. Dizziness. Nausea,

vomiting.

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 edema, frothy sputum.

**Skin contact** Skin irritation. Prolonged or repeated contact with skin may cause irritation, redness and

dermatitis.

## **Dura II A/C Flush Solvent**

Eye contact May cause temporary eye irritation. Irritating to eyes. Symptoms following overexposure may

include the following: Redness. Pain.

Indication of immediate medical attention and special treatment needed

Notes for the doctor 
No specific recommendations. If in doubt, get medical attention promptly.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing

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

media

contamination.

Special hazards arising from the substance or mixture

**Flammability Class** The product is not flammable. TCC (Tag closed cup).

Specific hazards Keep away from heat, sparks and open flame. Thermal decomposition or combustion

products may include the following substances: Toxic and corrosive gases or vapors. Closed

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

Hazardous combustion

products

Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and

other toxic gases or vapors. Fire creates: Carbonyl compounds. Chlorides.

Advice for firefighters

Protective actions during

firefighting

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

Special protective equipment

for firefighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective

clothing.

## 6. Accidental release measures

## Personal precautions, protective equipment and emergency procedures

Personal precautions Warn everybody of potential hazards and evacuate if necessary. Provide adequate ventilation.

Avoid inhalation of vapors. Use approved respirator if air contamination is above an

acceptable level. No smoking, sparks, flames or other sources of ignition near spillage. Follow precautions for safe handling described in this safety data sheet. For personal protection, see

Section 8.

**Environmental precautions** 

**Environmental precautions** Contain spillage with sand, earth or other suitable non-combustible material. Avoid release to

the environment.

## Methods and material for containment and cleaning up

Methods for cleaning up Absorb spillage with non-combustible, absorbent material. Do not discharge into drains or

watercourses or onto the ground. Contain and absorb spillage with sand, earth or other non-combustible material. Collect spillage with a shovel and broom, or similar and reuse, if possible. Dispose of waste to licensed waste disposal site in accordance with the

requirements of the local Waste Disposal Authority. It is recommended that gloves are made

of the following material: Neoprene.

Reference to other sections For personal protection, see Section 8. See Section 11 for additional information on health

hazards. For waste disposal, see section 13.

#### 7. Handling and storage

## Precautions for safe handling

Usage precautions Provide adequate ventilation. Avoid inhalation of vapors/spray and contact with skin and eyes.

#### Conditions for safe storage, including any incompatibilities

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

Unspecified storage. The product is not flammable. Storage class

Specific end uses(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

Store away from incompatible materials (see Section 10). Reference to other sections.

#### 8. Exposure Controls/personal protection

## Control parameters

## Occupational exposure limits

#### trans-DICHLOROETHYLENE

Long-term exposure limit (8-hour TWA): ACGIH 200 ppm 793 mg/m<sup>3</sup>

## 1,1,1,2,2,3,4,5,5,5-decafluoropentane

Long-term exposure limit (8-hour TWA): SUP 200 ppm

#### 1,1,1,3,3-PENTAFLUOROBUTANE

Long-term exposure limit (8-hour TWA): SUP 1000 ppm

ACGIH = American Conference of Governmental Industrial Hygienists.

#### **Additional Occupational**

**Exposure Limits** 

Ingredient comments WEL = Workplace Exposure Limits

## **Exposure controls**

## Protective equipment





Appropriate engineering

controls

No specific ventilation requirements. This product must not be handled in a confined space without adequate ventilation.

Eve/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. It is recommended that gloves are made of the following material: Nitrile rubber. Polyvinyl alcohol (PVA). Viton rubber (fluoro rubber).

Other skin and body

protection

Wear suitable protective clothing as protection against splashing or contamination. Wear apron or protective clothing in case of contact.

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.

Respiratory protection Vapors are heavier than air and may travel along the floor and accumulate in the bottom of

containers. In confined or poorly-ventilated spaces, a supplied-air respirator must be worn.

Wear self-contained breathing apparatus with full facepiece.

Thermal hazards Keep away from heat, sparks and open flame. Thermal decomposition or combustion

products may include the following substances: Toxic and corrosive gases or vapors.

## 9. Physical and Chemical Properties

## Information on basic physical and chemical properties

Appearance Clear liquid.

Color Colorless.

Odor Slight. Ether.

Odor threshold

No information available.

PH

No information available.

Melting point

No information available.

Initial boiling point and range estimated 41°C/106°F @ 101.3 kPa

Flash point The product is not flammable. Tag Closed Cup (ASTM D 56)

Evaporation rate >1 (ethanol = 1)

**Evaporation factor** No information available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or

explosive limits

Upper flammable/explosive limit: 13.5 %(V) Lower flammable/explosive limit: 4.3 %(V)

Vapor pressure 37.9 kPa @ 25°C

Vapor density 3.4

Relative density No information available.

Bulk density Not applicable.

Solubility(ies)

Partition coefficient

No information available.

Auto-ignition temperature

No information available.

Decomposition Temperature

No information available.

Viscosity

No information available.

**Refractive index** No information available.

Particle size Not applicable.

Molecular weight Not applicable.

Volatility 100%

Saturation concentration No information available.

Critical temperature No information available.

**Flammability** The product is not flammable.

## **Dura II A/C Flush Solvent**

10. Stability and reactivity

**Reactivity** The following materials may react strongly with the product: Alkaline earth metals. Powdered

metal.

Stability Stable at normal ambient temperatures and when used as recommended.

Possibility of hazardous

reactions

Will not polymerize.

Conditions to avoid Keep away from heat, sparks and open flame. Thermal decomposition or combustion

products may include the following substances: Toxic and corrosive gases or vapors.

Materials to avoid Alkali metals. Alkaline earth metals. Powdered metal.

Hazardous decomposition

products

Heating may generate the following products: Toxic and corrosive gases or vapors.

Halogenated hydrocarbons. Hydrogen fluoride (HF). Carbon dioxide (CO2). Carbon monoxide

(CO).

## 11. Toxicological information

# Information on toxicological effects

Acute toxicity - oral

**ATE oral (mg/kg)** 1,646.67

Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 32,133.33

Inhalation Vapors may irritate throat/respiratory system. A single exposure may cause the following

adverse effects: Coughing. Difficulty in breathing.

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

intoxication.

**Skin Contact** Product has a defatting effect on skin. May cause allergic contact eczema.

**Eye contact** May cause temporary eye irritation.

Medical Symptoms Gas or vapor in high concentrations may irritate the respiratory system. Symptoms following

 $over exposure \ may \ include \ the \ following: \ Headache. \ Fatigue. \ Nausea, \ vomiting.$ 

## Toxicological information on ingredients.

## trans-DICHLOROETHYLENE

Other health effects There is no evidence that the product can cause cancer.

Acute toxicity - oral

Acute toxicity oral (LD50

mg/kg)

1,235.0

**Species** Rat

**ATE oral (mg/kg)** 1,235.0

Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> 5,000.0

mg/kg)

## **Dura II A/C Flush Solvent**

Rabbit **Species** 

ATE dermal (mg/kg) 5,000.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l)

24,100.0

Rat

ATE inhalation (vapours

mg/l)

**Species** 

24,100.0

1,1,1,2,2,3,4,5,5,5-decafluoropentane

Acute toxicity - oral

Acute toxicity oral (LD50

mg/kg)

5,000.0

**Species** Rat

ATE oral (mg/kg) 5,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> 5,000.0

mg/kg)

**Species** Rat

ATE dermal (mg/kg) 5,000.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC<sub>50</sub> vapours mg/l)

**Species** Rat

ATE inhalation (vapours

mg/l)

114.0

114.0

Skin corrosion/irritation

Animal data Not irritating. Rabbit

Human skin model test Data lacking.

Extreme pH Not applicable. Not corrosive to skin.

Serious eye damage/irritation

Serious eye Not irritating. Rabbit

damage/irritation

Respiratory sensitization

Respiratory sensitization Data lacking.

Skin sensitization

Skin sensitization Not sensitizing. - Guinea pig: Not sensitizing.

Germ cell mutagenicity

Genotoxicity - in vitro This substance has no evidence of mutagenic properties.

## **Dura II A/C Flush Solvent**

**Genotoxicity - in vivo**This substance has no evidence of mutagenic properties.

Carcinogenicity

**Carcinogenicity** Does not contain any substances known to be carcinogenic.

IARC carcinogenicity Not listed.

NTP carcinogenicity Not listed.

OSHA Carcinogenicity Not listed.

Reproductive toxicity

Reproductive toxicity -

fertility

No evidence of reproductive toxicity in animal studies.

Skin Contact Skin irritation should not occur when used as recommended. May cause defatting

of the skin but is not an irritant.

**Eye contact** May cause eye irritation.

Acute and chronic health

hazards

There is no evidence that the product can cause cancer.

## 1,1,1,3,3-PENTAFLUOROBUTANE

Acute toxicity - oral

Acute toxicity oral (LD₅o

mg/kg)

2,000.0

Species Rat

**ATE oral (mg/kg)** 2,000.0

Acute toxicity - inhalation

Acute toxicity inhalation

100,000.0

(LC<sub>50</sub> vapours mg/l)

Species Rat

ATE inhalation (vapours

100,000.0

mg/l)

Specific target organ toxicity - single exposure

STOT - single exposure LOAEL 75100 ppm, Inhalation,

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEC 6 mg/l, Inhalation, Rat

Target organs Liver Kidneys

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.

Ecological information on ingredients.

## trans-DICHLOROETHYLENE

#### **Dura II A/C Flush Solvent**

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

1,1,1,2,2,3,4,5,5,5-decafluoropentane

**Ecotoxicity** It is unlikely that the substance will dissolve in water in amounts big enough to have

a toxic effect on fish and daphnies.

**Toxicity** 

**Toxicity** Very toxic to aquatic organisms.

Ecological information on ingredients.

trans-DICHLOROETHYLENE

Acute toxicity - fish LC<sub>50</sub>, 96 hours: 1350 mg/l, Fish

Acute toxicity - aquatic

invertebrates

EC<sub>50</sub>, 48 hours: 220 mg/l, Daphnia magna

1,1,1,2,2,3,4,5,5,5-decafluoropentane

LC<sub>50</sub>, 96 hours: 13.9 mg/l, Onchorhynchus mykiss (Rainbow trout) Acute toxicity - fish

Acute toxicity - aquatic

invertebrates

LC<sub>50</sub>, 48 hours: 11.7 mg/l, Daphnia magna

Acute toxicity - aquatic

plants

EC<sub>50</sub>, 72 hours: >120 mg/l, Algae

**DIMETHYL CARBONATE** 

**Toxicity** Not considered toxic to fish.

Persistence and degradability

Persistence and degradability No data available.

Ecological information on ingredients.

trans-DICHLOROETHYLENE

Persistence and

degradability

No data available.

1,1,1,2,2,3,4,5,5,5-decafluoropentane

Persistence and

degradability

The product is not expected to be biodegradable.

**DIMETHYL CARBONATE** 

Persistence and

degradability

The product is biodegradable.

Bioaccumulative potential

**Bio-Accumulative Potential** No data available on bioaccumulation.

Partition coefficient No information available.

Ecological information on ingredients.

## Dura II A/C Flush Solvent

## trans-DICHLOROETHYLENE

**Bio-Accumulative Potential** Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.

## 1,1,1,2,2,3,4,5,5,5-decafluoropentane

Bio-Accumulative Potential Bioaccumulation is unlikely to be significant because of the low water-solubility of

this product.

Partition coefficient Pow: 2.7

Mobility in soil

Mobility No data available.

Ecological information on ingredients.

# trans-DICHLOROETHYLENE

**Mobility** The product has poor water-solubility.

Results of PBT and vPvB assessment

Results of PBT and vPvB

assessment

This product does not contain any substances classified as PBT or vPvB. No data available.

Other adverse effects

Other adverse effects The product contains a substance or substances that will contribute to global warming

(greenhouse effect).

13. Disposal considerations

Waste treatment methods

General information Refer to manufacturer/supplier for information on recovery/recycling. Waste should be treated

as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the

requirements of the local Waste Disposal Authority.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the

local Waste Disposal Authority. Reuse or recycle products wherever possible.

14. Transport information

General Not regulated. The product is not covered by international regulations on the transport of

dangerous goods (IMDG, IATA, DoT).

**UN Number** 

Not applicable. No information required.

UN proper shipping name

Proper shipping name (TDG) Non Regulated Liquid Cleaning Compound NOS

Proper shipping name (IMDG) Non Regulated Liquid Cleaning Compound NOS

Proper shipping name (ICAO) Non Regulated Liquid Cleaning Compound NOS

Proper shipping name (DOT) Non Regulated Liquid Cleaning Compound NOS

Transport hazard class(es)

Not applicable. No information required.

## Transport labels

## Packing group

Not applicable. No information required.

## **Environmental hazards**

#### **Environmentally Hazardous Substance**

No.

## Special precautions for user

Not determined.

**Transport in bulk according to** Not applicable. No information required.

Annex II of MARPOL 73/78

and the IBC Code

## 15. Regulatory information

## **US Federal Regulations**

## SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

Not listed.

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

trans-DICHLOROETHYLENE

Final CERCLA RQ: 1000(454) pounds (Kilograms)

## SARA Extremely Hazardous Substances EPCRA Reportable Quantities

Not listed.

# SARA 313 Emission Reporting

Not listed.

# **CAA Accidental Release Prevention**

Not listed.

## SARA (311/312) Hazard Categories

Acute

# **OSHA Highly Hazardous Chemicals**

Not listed.

# **US State Regulations**

## California Proposition 65 Carcinogens and Reproductive Toxins

Not listed.

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

Not listed.

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

Not listed.

#### California Directors List of Hazardous Substances

trans-DICHLOROETHYLENE

Present.

# Dura II A/C Flush Solvent

#### Massachusetts "Right To Know" List

trans-DICHLOROETHYLENE

Present.

DIMETHYL CARBONATE

Yes.

Rhode Island "Right To Know" List

Not listed.

Minnesota "Right To Know" List

Not listed.

New Jersey "Right To Know" List

DIMETHYL CARBONATE

Yes.

Pennsylvania "Right To Know" List

trans-DICHLOROETHYLENE

Present.

DIMETHYL CARBONATE

Yes.

**Inventories** 

US - TSCA

Yes

#### 16. Other information

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

Revision date 2/23/2016

Revision 5

Supersedes date 12/30/2015

**SDS No.** BULK - 69991

SDS status Approved.

Hazard statements in full H225 Highly flammable liquid and vapor.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness.

H412 Harmful to aquatic life with long lasting effects.

NFPA - health hazard Irritation, minor residual injury. (1)

NFPA - flammability hazard Will not burn. (0)

NFPA - instability hazard Unstable if heated. (1)

NFPA - special hazard N/A

ACA HMIS Health rating. Slight Hazard. (1)

**ACA HMIS Flammability** 

Will not burn. (0)

rating.

ACA HMIS Physical hazard

Unstable if heated. (1)

rating.

**ACA HMIS Personal** 

X Ask your supervisor for guidance

protection rating.

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.