SAFETY DATA SHEET
PW2 LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

1. Identification

Product identifier

Product name PW2 LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

Product number MCC-PW210Y, MCC-PW210A, MCC-PW2101, MCC-PW2105, MCC-PW2106

Recommended use of the chemical and restrictions on use

Application Cleaning agent.

Details of the supplier of the safety data sheet

Supplier MicroCare Corporation

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 Aerosol 3 Press. Gas, Liquefied - H280

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. Not considered to be a significant hazard due to the small quantities used. Gas or vapor displaces oxygen available for breathing (asphyxiant).

Label elements
PW2 LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

Pictogram

Signal word

Danger

Hazard statements
H280 Contains gas under pressure; may explode if heated.
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
P251 Pressurized container: Do not pierce or burn, even after use
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 If skin irritation occurs: Get medical advice/ attention.
P337+P313 If eye irritation persists: Get medical advice/ attention.
P301+P312 If swallowed: Call a poison center/ doctor if you feel unwell.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
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

<table>
<thead>
<tr>
<th>trans-DICHLOROETHYLENE</th>
<th>60-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 156-60-5</td>
<td></td>
</tr>
</tbody>
</table>

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

HFC-134a Tetrafluoroethane

<table>
<thead>
<tr>
<th>HFC-134a Tetrafluoroethane</th>
<th>10-30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 811-97-2</td>
<td></td>
</tr>
</tbody>
</table>

Classification
Press. Gas, Liquefied - H280
PW2 LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

A MIXTURE OF: (R,R)-1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE, (S,S)-1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE

10-30%

CAS number: —

Classification
Aquatic Chronic 3 - H412

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.

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.

Ingestion
Do not induce vomiting. Rinse mouth thoroughly with water. Give plenty of water to drink. Consult a physician for specific advice.

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

Eye contact
Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Consult a physician for specific advice.

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.

Inhalation
Vapors may cause headache, fatigue, dizziness and nausea. Difficulty in breathing. Upper respiratory irritation. Severe irritation of nose and throat.

Ingestion
May cause stomach pain or vomiting. Drowsiness, dizziness, disorientation, vertigo.

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

Eye contact
Irritation of eyes and mucous membranes. 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.

Special hazards arising from the substance or mixture

Flammability Class
The product is not flammable.
PW2  LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

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. Aerosol containers can explode when heated, due to excessive pressure build-up.

Hazardous combustion products
Heating may generate the following products: Toxic and corrosive gases or vapors. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. Oxides of carbon. Oxides of nitrogen.

Advice for firefighters
Protective actions during firefighting
Move containers from fire area if it can be done without risk. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk.

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.

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
Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation.

Reference to other sections
See Section 11 for additional information on health hazards.

7. Handling and storage

Precautions for safe handling

Usage precautions
Provide adequate ventilation. Avoid inhalation of vapors/spray and contact with skin and eyes. Keep away from heat, sparks and open flame. Thermal decomposition or combustion products may include the following substances: Toxic and corrosive gases or vapors.

Conditions for safe storage, including any incompatibilities

Storage precautions
Aerosol cans: Must not be exposed to direct sunlight or temperatures above 50°C.

Specific end uses(s)

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

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

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits
trans-DICHLOROETHYLENE
Long-term exposure limit (8-hour TWA): ACGIH 200 ppm  793 mg/m³
HFC-134a Tetrafluoroethane
PW2 LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

Long-term exposure limit (8-hour TWA): OES 4240 mg/m³
Short-term exposure limit (15-minute): OES
ACGIH = American Conference of Governmental Industrial Hygienists.

Additional Occupational Exposure Limits

Ingredient comments
ACGIH = US Standard.

Exposure controls

Protective equipment

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

Eye/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.

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible.

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
No specific hygiene procedures recommended but good personal hygiene practices should always be observed when working with chemical products. When using do not eat, drink or smoke.

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.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance
Clear liquid. Aerosol.

Color
Colorless.

Odor
Slight. Ether.

Odor threshold
No information available.

pH
No information available.

Melting point
No information available.

Initial boiling point and range
39°C/102°F @ 101.3 kPa

Flash point
The product is not flammable.

Evaporation rate
No information available.

Evaporation factor
No information available.

Upper/lower flammability or explosive limits
Upper flammable/explosive limit: 13 %(V) Lower flammable/explosive limit: 5.5 %(V)

Other flammability
The product is not flammable. Aerosol ignition distance: none at 0.0 cm
PW2 LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

Vapor pressure 55.3 kPa @ 25°C
Vapor density 3.7
Relative density No information available.
Bulk density No information available.
Solubility(ies) 0.3 g/100 g water @ 20°C Slightly soluble in water.
Partition coefficient No information available.
Auto-ignition temperature No information available.
Decomposition Temperature No information available.
Viscosity No information available.
Explosive properties No information available.
Oxidizing properties Not known.
Comments Aerosol.
Refractive index No information available.
Particle size No information available.
Molecular weight No information available.
Vapor pressure 100%
Saturation concentration No information available.
Critical temperature No information available.
Volatile organic compound This product contains a maximum VOC content of 1080 g/l.
Flammability The product is not flammable.

10. Stability and reactivity

Reactivity The following materials may react with the product: Strong alkalis.
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) 1,816.18
PW2  LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

Acute toxicity - inhalation
ATE Inhalation (vapours mg/l)  35,441.18

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 overexposure 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 (LD₅₀ mg/kg)  5,000.0
Species  Rabbit
ATE dermal (mg/kg)  5,000.0

Acute toxicity - inhalation
Acute toxicity inhalation (LC₅₀ vapours mg/l)  24,100.0
Species  Rat
ATE inhalation (vapours mg/l)  24,100.0

HFC-134a Tetrafluoroethane

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

Acute toxicity - inhalation
Acute toxicity inhalation (LC₅₀ gases ppmV)  567,000.0
Species  Rat
ATE inhalation (gases ppm)  567,000.0
PW2  LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

A MIXTURE OF: (R,R)-1,1,1,2,2,3,4,5,5,5-Decafluoropentane, (S,S)-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 (LD₅₀ mg/kg) 5,000.0
Species Rabbit
ATE dermal (mg/kg) 5,000.0

Acute toxicity - inhalation
Acute toxicity inhalation (LC₅₀ vapours mg/l) 114.0
Species Rat
ATE inhalation (vapours mg/l) 114.0

12. Ecological Information

Ecotoxicity Dangerous for the environment if discharged into watercourses.

Ecological information on ingredients.
trans-DICHLOROETHYLENE
Ecotoxicity Low acute toxicity to aquatic organisms.

Toxicity
Ecological information on ingredients.
trans-DICHLOROETHYLENE

Acute toxicity - fish LC₅₀, 96 hours: 1350 mg/l, Fish
Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 220 mg/l, Daphnia magna

HFC-134a Tetrafluoroethane
Acute toxicity - fish LC₅₀, 96 hours: 450 mg/l, Fish
Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 980 mg/l, Daphnia magna

A MIXTURE OF: (R,R)-1,1,1,2,2,3,4,5,5,5-Decafluoropentane, (S,S)-1,1,1,2,2,3,4,5,5,5-
Decafluoropentane

Acute toxicity - fish LC₅₀, 96 hours: 27.2 mg/l, Pimephales promelas (Fat-head Minnow)
PW2  LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

Acute toxicity - aquatic invertebrates
LC₅₀, 48 hours: 11.7 mg/l, Daphnia magna

Acute toxicity - aquatic plants
EC₅₀, 72 hours: >120 mg/l, Pseudokirchneriella subcapitata

Persistence and degradability
The product is not readily biodegradable.

Ecological information on ingredients.

trans-DICHLOROETHYLENE

Persistence and degradability
No data available.

A MIXTURE OF: (R,R)-1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE, (S,S)-1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE

Biodegradation
Not readily biodegradable.

Biocumulative potential

Biocumulative Potential
No data available on bioaccumulation.

Partition coefficient
No information available.

Ecological information on ingredients.

trans-DICHLOROETHYLENE

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

HFC-134a Tetrafluoroethane

Partition coefficient
Pow: 1.06

A MIXTURE OF: (R,R)-1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE, (S,S)-1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE

Biocumulative Potential
Bioaccumulation is unlikely.

Partition coefficient
Pow: 2.7

Mobility in soil

Mobility
The product contains volatile substances which may spread in the atmosphere.

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.

Other adverse effects
Other adverse effects

The product contains a substance or substances that will contribute to global warming (greenhouse effect). The product contains a substance which has a photochemical ozone creation potential.

13. Disposal considerations

Waste treatment methods

General information

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.

14. Transport information

UN Number

UN No. (TDG) UN1950
UN No. (IMDG) UN1950
UN No. (ICAO) UN1950
UN No. (DOT) UN1950

UN proper shipping name

Proper shipping name (TDG) UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY
Proper shipping name (IMDG) UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY
Proper shipping name (ICAO) UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY
Proper shipping name (DOT) UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY

Transport hazard class(es)

TDG class 2.2
TDG label(s) 3
IMDG Class 2.2
ICAO class/division 2.2
ICAO subsidiary risk N/A

Transport labels

Packing group

IMDG packing group N/A
ICAO packing group N/A

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

Not applicable. No information required.

15. Regulatory information

US Federal Regulations
PW2  LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

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
Pressure

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.

Massachusetts "Right To Know" List
trans-DICHLOROETHYLENE
Present.

Rhode Island "Right To Know" List
Not listed.

Minnesota "Right To Know" List
HFC-134a Tetrafluoroethane
Present.

New Jersey "Right To Know" List
Not listed.

Pennsylvania "Right To Know" List
trans-DICHLOROETHYLENE
Present.
PW2  LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

Inventories
Canada - DSL/NDSL

A MIXTURE OF: (R,R)-1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE, (S,S)-1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE
DSL

HFC-134a Tetrafluoroethane
DSL

trans-DICHLOROETHYLENE
DSL

US - TSCA
All the ingredients are listed.

16. Other information

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

Revision date
2/22/2016

Revision
18

Supersedes date
2/22/2016

SDS No.
AEROSOL - PW2

SDS status
Approved.

Hazard statements in full
H225 Highly flammable liquid and vapor.
H280 Contains gas under pressure; may explode if heated.
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
Burns only if pre-heated. (1)

NFPA - instability hazard
Unstable if heated. (1)

NFPA - special hazard
N/A

ACA HMIS Health rating.
Slight Hazard. (1)

ACA HMIS Flammability rating.
Will not burn. (0)

ACA HMIS Physical hazard rating.
Unstable if heated. (1)

ACA HMIS Personal protection rating.
A

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.