



SAFETY DATA SHEET

PW2 - LEAD-FREE FLUX REMOVER - POWERCLEAN, AEROSOL

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

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

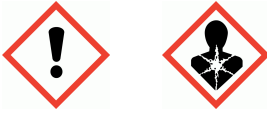
Emergency telephone CHEMTREC (800) 424-9300

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Not Classified
Health hazards Acute Tox. 4 - H302 Acute Tox. 4 - H332 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

H302+H332 Harmful if swallowed or if inhaled.
 H304 May be fatal if swallowed and enters airways.
 H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P261 Avoid breathing spray.
 P271 Use only outdoors or in a well-ventilated area.
 P273 Avoid release to the environment.
 P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.
 P251 Pressurized container: Do not pierce or burn, even after use
 P301+P310 If swallowed: Immediately call a poison center/ doctor.
 P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
 P314 Get medical advice/ attention 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**

trans-DICHLOROETHYLENE	30-60%
CAS number: 156-60-5	
Classification	
Flam. Liq. 2 - H225	
Acute Tox. 4 - H302	
Acute Tox. 4 - H332	
Asp. Tox. 1 - H304	
Aquatic Chronic 3 - H412	
HFC-134a Tetrafluoroethane	10-30%
CAS number: 811-97-2	
Classification	
Press. Gas, Liquefied - H280	

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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 CAS number: —	10-30%
Classification Aquatic Chronic 3 - H412	

The full text for all hazard statements is 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.

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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.
<u>Advice for firefighters</u>	
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.
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Environmental precautions

Environmental precautions	Contain spillage with sand, earth or other suitable non-combustible material. Avoid release to the environment.
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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.
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Reference to other sections	See Section 11 for additional information on health hazards.
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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.
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Conditions for safe storage, including any incompatibilities

Storage precautions	Aerosol cans: Must not be exposed to direct sunlight or temperatures above 50°C.
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Specific end uses(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.2.
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Reference to other sections.	Store away from incompatible materials (see Section 10).
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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

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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

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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.
Volatility	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 (CO ₂). Carbon monoxide (CO).

11. Toxicological information**Information on toxicological effects****Acute toxicity - oral**

ATE oral (mg/kg) 865.8

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Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 11.0

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) 500.0

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) 11.0

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

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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)

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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

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.

Bioaccumulative potential

Bio-Accumulative Potential No data available on bioaccumulation.

Partition coefficient No information available.

Ecological information on ingredients.**trans-DICHLOROETHYLENE**

Bio-Accumulative 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

Bio-Accumulative 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

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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

Environmental hazards

Special precautions for user

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable. No information required.

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15. Regulatory information

International Regulations

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
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.

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Pennsylvania "Right To Know" List

trans-DICHLOROETHYLENE

Present.

Inventories

Canada - DSL/NDSL

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DSL

trans-DICHLOROETHYLENE

DSL

HFC-134a Tetrafluoroethane

DSL

US - TSCA

All the ingredients are listed.

1,1,1,2,2,3,4,5,5,5-DECAFLUOROPENTANE (CAS# 138495-42-8) is controlled by TSCA Section 5, Significant New Use Rule

(SNUR; 40 CFR 721.5645) The approved uses are: precision and general cleaning, carrier fluid, displacement drying, printed circuit board cleaning, particulate removal and film cleaning, process medium, heat transfer fluid (dielectric and non-dielectric), and test fluid. Processors and users of this substance must also comply with the applicable general SNUR requirements set forth in 40 CFR 721 subpart A, including export notification requirements if applicable (40 CFR 721.20), and the applicable record keeping requirements set forth at 40 CFR 721.125.

16. Other information

Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	11/23/2016
Revision	30
Supersedes date	11/22/2016
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. H332 Harmful if inhaled. 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)

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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.