MATERIAL SAFETY DATA SHEET

3	0	0	CO
Health	Flammability	Reactivity	Other

MacDermid
INCORPORATED
245 FREIGHT ST. • WATERBURY, CT 06702 • (203) 575-5700

ISOPREP 184

12617

PRODUCT CODE MUST ACCOMPANY ALL INQUIRIES REGARDING THIS PRODUCT

Issue Date: 5/01/1994 Page: 1
Revised Date: 1/31/1997 0

24 HR. EMERGENCY NUMBER: CHEMTREC (800) 424-9300

SECTION 1 PRODUCT IDENTIFICATION

Trade Name: ISOPREP 184
Chemical Family: ACID
Formula: Proprietary Mixture
HMIS Rating: 3 HEALTH 0 FLAMMABILITY 0 REACTIVITY CO OTHER
(0 = Insignificant, 1 = Slight, 2 = Moderate, 3 = High and 4 = Extreme)

SECTION 2 HAZARDOUS INGREDIENTS

MacDermid, Inc. has indentified the following chemical ingredient(s) as hazardous.

Ingredient	CAS #	By Weight %
Ferric Sulfate	10028-22-5	20 - 30
Nitric Acid	7697-37-2	1 - 10
Sulfuric Acid	7664-93-9	5 - 15

SECTION 3 PHYSICAL DATA

Density: lb/gal
Specific Gravity: 1.430
Freezing Point: <-13.00 F / -25.00 C
Vapor Pressure: Not Determined
Chemical Oxygen Demand (COD): Not Determined
Solubility in Water: Complete Solubility
Color / Odor: Clear amber-brown/acidic
Form: LIQUID
pH: 1.2-1.4
Flash Point: NA
Volatile %: Not Determined

(Note: These physical properties are typical values for this product.)

SECTION 4 FIRE AND EXPLOSION DATA

Flash Point: NA

Extinguishing Media: Never allow run-off to enter sewers or waterways. Water, carbon dioxide, dry chemical, foam, halon. As appropriate for surrounding material.

Unusual Fire & Explosion Hazards: Reacts with metals to form hydrogen gas which is explosive Wear self-contained breathing apparatus/protective clothing

SECTION 5 FIRST AID DATA

Contact a physician in all cases of exposure. First aiders should provide for their own safety prior to rendering assistance.

Eyes: Take the victim immediately to the nearest eyewash or shower Wash affected eyes under slowly running water for 15 minutes Seek medical attention immediately.

Skin: Remove contaminated clothing. Wash skin with soap & water. If irritation develops, contact a physician.

IMPORTANT HEALTH & SAFETY INFORMATION

POSTED

MacDermid Incorporated
245 FREIGHT STREET - WATERBURY, CT 06702 - TELEPHONE (203)575-5700 - TELEX 4436011 - FAX (203)575-5630

MATERIAL SAFETY DATA SHEET

Product: ISOPREP 184 Issue Date: 5/01/1994 Page: 2
Product code: __HEAD_PRDC Revised Date: 1/31/1997

24 Hour Emergency Number: CHEMTREC (1-800-424-9300)

SECTION 5 FIRST AID DATA

Ingestion: Do NOT induce vomiting. If conscious, have victim rinse mouth, then drink large amounts of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Inhalation: Remove victim to fresh air and call a physician immediately. If not breathing give mouth to mouth respiration. If breathing is difficult, give oxygen.

CAUTION: If unconscious-having trouble breathing-or in convulsions do not induce vomiting or give water.

Always clean contaminated clothing and gear prior to reuse. NEVER administer anything to an unconscious person.

SECTION 6 - HEALTH EFFECT DATA

Primary route(s) of Exposure: Eye, Skin, Inhalation and Ingestion.

Eye Contact (Acute): Chemical irritation follows initial mechanical irritation Can cause irritation or burns on direct contact Intense watering of eyes will occur

Eye Contact (Chronic): May cause eye injury which may persist for several days. Prolonged contact may cause permanent eye injury (blindness)

Skin Contact (Acute): May cause irritation and damage to skin Exposure to skin will result in burning sensation Painful sensation will occur

Skin Contact (Chronic): Profound damage to tissues may occur with prolonged exposure

Ingestion (Acute): May burn mouth/throat and stomach May cause abdominal cramps with distension of stomach Damage to digestive tract including corrosive effects

Inhalation (Acute): May cause burns to entire respiratory system. May experience general feeling of discomfort

Inhalation (Chronic): Prolonged inhalation may result in rapid breathing

SECTION 7 - PERSONAL PROTECTIVE DATA

Respiratory Protection: If there is a value for OSHA-PEL/ACGIH-TLV in section 13 and it is exceeded, it is recommended that a NIOSH approved respirator be used. Consult with your Industrial Hygienist for appropriate cartridge selection and use. For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure demand, self contained breathing apparatus is recommended.

Ventilation: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, dusts, mists or aerosols may be released.

Protective Equipment: Safety glasses and/or splash proof goggles, face shields and the availability of an eye wash is recommended. Chemically resistant apron, boots and gloves. Recommended material of construction: PVC, rubber, neoprene. The availability of a safety shower is recommended. If clothing is contaminated, remove clothing and thoroughly wash the affected body area. Launder contaminated clothing before reuse.

These are general recommendations to provide a safe level of protection for various material handling conditions. Consult with your Safety Professional/Industrial Hygienist for specific information regarding applications at your facility.

SECTION 8 TOXICOLOGY DATA

TOXICITY STUDIES: Toxicity studies have not been conducted on this product. However, toxicity literature surveys have been conducted on the ingredient(s) in Section 2. The results are as follows:

Acute Oral Toxicity: Sulfuric Acid: LD50 = 2140 mg/kg (Rat)

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MATERIAL SAFETY DATA SHEET

Product: ISOPREP 184 Issue Date: 5/01/1994 Page: 3
Product code: __HEAD_PRDC Revised Date: 1/31/1997

24 Hour Emergency Number: CHEMTREC (1-800-424-9300)

SECTION 8 TOXICOLOGY DATA

Acute Dermal Toxicity: Unknown

Acute Respiratory Toxicity: Sulfuric Acid: LC50 = 510 mg/m3/2H (Rat)

Toxicity Hazard Review (THR): Sulfuric acid is moderately toxic by ingestion. A severe eye irritant. Extremely irritating; corrosive and toxic to tissues resulting in rapid destruction of tissues. There are systemic effects secondary to tissue damage.

Listed as suspected carcinogen by IARC: No NTP: No OSHA: No

SECTION 9 REACTIVITY DATA

Incompatibility: Alkaline materials.

Hazard Decomposition Products: Oxides of sulfur and nitrogen

Stability: Stable

Conditions To Avoid: Contact with cyanides

Hazardous Polymerization: No hazardous polymerization.

SECTION 10 SPILLS & DISPOSAL DATA

In case of Transportation Accidents, call the following 24 hour telephone number: CHEMTREC (1-800-424-9300).

Spill Control and Recovery: Wear protective clothing and equipment during cleanup. Absorb spills on an inert material such as earth, sand or vermiculite; sweep up and dispose of in accordance with federal, state and local regulations.

Disposal: Dispose of in accordance with all applicable federal, state and local regulations.

Due to more restrictive waste disposal regulations, NEVER wastetreat or dispose of material until you check your appropriate local, state & federal regulations for requirements. Spills may REQUIRE notification to FEDERAL, STATE and/or LOCAL AUTHORITIES.

SECTION 11 TRANSPORTATION DATA

DOT Proper Shipping Name:
CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
(CONTAINS FERRIC SULFATE/SULFURIC ACID)

Hazard: 8/CORROSIVE MATERIAL

UN/NA#: UN3264 **Pkg Grp:** II

DOT Reportable Quantity (RQ): 294

IMO: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

IMO Class/Sub Class: CORROSIVE/8/0 **Pkg Grp:** II

UN/NA# : UN3264/8147-1

IATA: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

IATA Class/Sub Class: CORROSIVE/8/0 **Pkg Grp:** II

UN/NA# : UN3264

MacDermid Incorporated

245 FREIGHT STREET - WATERBURY, CT 06702 - TELEPHONE (203)575-5700 - TELEX 4436011 - FAX (203)575-5630

MATERIAL SAFETY DATA SHEET

Product: ISOPREP 184 Issue Date: 5/01/1994 Page: 4
Product code: __HEAD_PRDC Revised Date: 1/31/1997

24 Hour Emergency Number: CHEMTREC (1-800-424-9300)

SECTION 11 TRANSPORTATION DATA

Export license may be required to export this product.

SECTION 12 GENERAL STORAGE DATA

Storage Temperature: Maximum: 119.98F / 48.88C Minimum: 37 F (3 C)

Material should be stored in the properly sealed original container

CORROSIVE MATERIAL: Corrosive materials must not be above, below or adjacent to: flammables or oxidizers.
TOXICS: Cyanides or cyanide mixtures must not be loaded or stored with acids.

SECTION 13 REGULATORY DATA

The following regulations apply to this product.

FEDERAL REGULATIONS:

OSHA Hazard Communication Rule, 29 CFR 1910.1200: Based on our evaluation, the following ingredients in this product are subject to this rule:

Ingredient	CAS #	By Weight %	OSHA-PEL	ACGIH-TLV
Nitric Acid	7697-37-2	1 - 10	2.00PPM	2.00PPM
Sulfuric Acid	7664-93-9	5 - 15	1.00MG/M3	1.00MG/M3

CRECLA/Superfund, 40 CFR 117, 302304: Notifications of spills of this product is required.

SARA SUPERFUND AMENDMENTS & REAUTHORIZATIONS ACT of 1986 (TITLE III) Sections 302, 311, 312 & 313:

Section 302: Extremely Hazardous Substances (40 CFR 355): This product contains ingredients listed in APPENDIX A of 40 CFR 355 as an extremely hazardous substance (EHS):

Ingredient	CAS #	By Weight %
Nitric Acid	7697-37-2	1 - 10
Sulfuric Acid	7664-93-9	5 - 15

SECTION 311 & 312 - M.S.D.S. REQUIREMENTS (40 CFR 370):

This product contains ingredient(s) listed in APPENDIX A of 40 CFR 355 and hazardous chemicals under 29 CFR 1910.1200 (c). The product should be reported under the following E.P.A. hazard categories.

- X Immediate (Acute) health hazard
- X Delayed (Chronic) health hazard
- _ Fire hazard
- _ Sudden release of pressure hazard
- _ Reactive hazard

Under Section 311, submittal of MSDS or a list of product names to the local emergency planning commission, state emergency response commission, the local fire department is required after October 17, 1987. Consult the regulation for pertinent changes and updates.

Section 313 - List of Toxic Chemicals (40 CFR 372): This product contains the following ingredients listed under 40 CFR 372.65

Ingredient	CAS #	By Weight %

MacDermid Incorporated
245 FREIGHT STREET - WATERBURY, CT 06702 - TELEPHONE (203)575-5700 - TELEX 4436011 - FAX (203)575-5630

MATERIAL SAFETY DATA SHEET

Product: ISOPREP 184 Issue Date: 5/01/1994 Page: 5
Product code: __HEAD_PRDC Revised Date: 1/31/1997

24 Hour Emergency Number: CHEMTREC (1-800-424-9300)

SECTION 13 REGULATORY DATA

Nitric Acid	7697-37-2	1 - 10
Sulfuric Acid	7664-93-9	5 - 15

TSCA: TOXIC SUBSTANCE CONTROL ACT (TSCA): The chemical ingredient(s) in this product are listed on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION & RECOVERY ACT (RCRA), 40 CFR SUBPARTS C & D:

Please refer to Section 10, disposal information for pertinent data.

Total Toxic Organics: This product does not contain ingredients on the list of Total Toxic Organics.

OSHA Process Safety (1910.119): This product does not contain ingredients listed in Appendix A of 29 CFR 1910.119 list of highly Hazardous Chemicals, Toxics and Reactives of OSHA process safety management.

Clean Air Act: This product contains ingredients listed on the Hazardous Air Pollutants (HAPS) of CAA 40 CFR 112 (G).

Ingredient	CAS #	By Weight %
Nitric Acid	7697-37-2	1 - 10

Ozone Depleting Substances: This product does not contain ingredient(s) listed on the Ozone Depleting Substances of CAA 40 CFR 82.

STATE REGULATIONS:

California Proposition 65: This product complies with the MSDS and labeling requirements of the Safe Drinking Water and Toxic Enforcement Act of 1986. This product does not contain ingredients listed on California Prop65 List.

Michigan Critical Materials: This product does not contain ingredients listed on the Michigan Critical Materials Register.

The information listed above does not include all Federal, State, and International regulations. The regulations listed above may change from time to time; itis the users responsibility to keep advised of current regulatory requirements.

Prepared by MacDermid, Inc. Safety & Regulator Compliance Department, based upon publicly available reference information.

SECTION 14 USER NOTIFICATION

To the best of our knowlegde the information contained herein is correct. All chemicals may present unknown health hazards and should be used with causion. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitibility of the chemical is the sole responsibility of the useuser. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. NO REPRESENTATIONS OR WARRENTIES, EITHER EXPRESSED OR IMPLIED OR MERCHANTABILITY, FITNESS FORA PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HERE UNDER WITH RESPECT TO THE INFORMATION CONTAINED HEREIN OR THE CHEMICAL TO WHICH THE INFORMATION REFERS.

Material Safety Data Sheets

MSDS

MacDermid INCORPORATED
245 Freight Street • Waterbury, CT 06702
Telephone (203)575-5700 - FAX (203)575-5630

3 0 0 -
HealthFlammability ReactivityOther

MATERIAL SAFETY DATA SHEET

PRODUCT ISOPREP 184
PRODUCT CODE 12617
ISSUE DATE 05/01/94
REVISED DATE 6/13/2002

24 Hour Emergency Number: CHEMTREC(1-800-424-9300) 7

SECTION 1 :- PRODUCT IDENTIFICATION

TRADE NAME ISOPREP 184
CHEMICAL FAMILY
FORMULA Proprietary Mixture
HMIS RATING:

3	Health	0	Flammability
0	Reactivity	-	Other

SECTION 2 :- COMPOSITION / INFORMATION ON INGREDIENTS

MacDermid Inc. has identified the following chemical ingredient (s) as hazardous.

Ingredient	CAS#	By Weight %
Ferric sulfate	10028-22-5	15 - 25
Nitric acid	7697-37-2	3 - 5
Sulfuric acid	7664-93-9	12 - 16

SECTION 3 :- PHYSICAL DATA

DENSITY 11.926 Lb/Gl
FORM Liquid
SPECIFIC GRAVITY 1.43
PH 1.3
FREEZING POINT <-13.00 F / -25 C
FLASH POINT NOT APPLICABLE
VAPOR PRESSURE Unknown
VOLATILE % Unknown
BOILING POINT Unknown
MELTING POINT NA
CHEMICAL OXYGEN DEMAND (COD) Unknown mg/l mg/l mg/l
BIOLOGICAL OXYGEN DEMAND (BOD) Unknown
SOLUBILITY IN WATER Complete Solubility
COLOR/ODOR Clear amber-brown/acidic
NOTE : These physical properties are typical values for this

product.

SECTION 4 :- FIRE AND EXPLOSION DATA

FLASH POINT	NOT APPLICABLE
EXTINGUISHING MEDIA	Water, carbon dioxide, dry chemical, foam, halon. As appropriate for surrounding material. NEVER allow run-off to enter sewers or waterways.
UNUSUAL FIRE & EXPLOSION HAZARDS	Reacts with metals to form hydrogen gas which is explosive Wear self-contained breathing apparatus/protective clothing

SECTION 5 :- FIRST AID DATA

Contact a physician in all cases of exposure. First aiders should provide for their own safety prior to rendering assistance.

EYES	Take the victim immediately to the nearest eyewash or shower Wash affected eyes under slowly running water for 15 minutes Seek medical attention immediately.
SKIN	Flush with large amounts of water for 15 minutes. Contact a physician immediately.
INGESTION	Do NOT induce vomiting. If conscious, have victim rinse mouth, then drink large amounts of water. Never give anything by mouth to an unconscious person. Call a physician immediately.
INHALATION	Remove the victim to cool uncontaminated area Monitor the patient for respiratory distress
CAUTION	If unconscious - having trouble breathing - or in convulsions do not induce vomiting or give water.

Always clean contaminated clothing and gear prior to reuse. NEVER administer anything to an unconscious person.

SECTION 6 :- HEALTH EFFECTS DATA

Primary Route(s) of Exposure : Eye, Skin, Inhalation and Ingestion

EYE CONTACT (ACUTE)	Brief contact with liquid or mists will severely burn eyes.
EYE CONTACT (CHRONIC)	May cause eye injury which may persist for several days. Prolonged contact may cause permanent eye injury (blindness)

SKIN CONTACT (ACUTE)	Causes severe skin irritation and burns.
SKIN CONTACT (CHRONIC)	Profound damage to tissues may occur with prolonged exposure
INGESTION (ACUTE)	Will cause severe burns to all areas of contact.
INGESTION (CHRONIC)	No data available.
INHALATION (ACUTE)	Inhalation of mists will burn mucous membranes and respiratory system.

SECTION 7 :- PERSONAL PROTECTIVE DATA

RESPIRATORY PROTECTION	If there is a value for OSHA-PEL/ACGIH-TLV in section 13 and it is exceeded, it is recommended that a NIOSH approved respirator be used. Consult with your Industrial Hygienist for appropriate cartridge selection and use. See 29CFR 1910.134 for details. For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure demand, self contained breathing apparatus is recommended.
VENTILATION	General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, dusts, mists or aerosols may be released.
PROTECTIVE EQUIPMENT	Chemically resistant apron, boots and gloves. Recommended material of construction: PVC, rubber, neoprene. The availability of a safety shower is recommended. If clothing is contaminated, remove clothing and thoroughly wash the affected body area. Launder contaminated clothing before reuse. Safety glasses and/or splash proof goggles, face shields and the availability of an eye wash is recommended. These are general reccommendations to provide a safe level of protection for various material handling conditions. Consult with your Safety Professional/Industrial Hygienist for specific information reguarding applications at your facility.

These are general recommendations to provide a safe level of protection for various material handling conditions. Consult with your Safety Professional/Industrial Hygienist for specific information regarding applications at your facility

SECTION 8 :- TOXICOLOGY DATA

TOXICITY STUDIES :

Toxicity studies have not been conducted on this product. However toxicity literature surveys have been conducted on the ingredient(s) in section 2. The results are as follows:

ACUTE ORAL TOXICITY Sulfuric Acid: LD50 = 2140 mg/kg (Rat)

ACUTE DERMAL TOXICITY Unknown

ACUTE RESPIRATORY TOXICITY Sulfuric Acid: LC50 = 510 mg/m3/2H (Rat)

Listed as suspected carcinogen by :
IARC NO **NTP** NO **OSHA** NO

SECTION 9 :- REACTIVITY DATA

INCOMPATIBILITY Alkaline materials.

HAZARD DECOMPOSITION PRODUCTS Oxides of sulfur and nitrogen

STABILITY Stable

CONDITIONS TO AVOID Contact with cyanides

HAZARDOUS POLYMERIZATION No hazardous polymerization.

SECTION 10 :- SPILLS & DISPOSAL DATA

In case of Transportation Accidents, call the following 24 hour telephone number :
CHEMTREC (1-800-424-9300)

SPILL CONTROL AND RECOVERY Soak up into an oil absorbant, shovel up and place in closed containers for disposal. Dike to contain large quantities and , pump into drums for use or disposal.

DISPOSAL Dispose of in accordance with all applicable federal, state and local regulations.

SECTION 11 :- TRANSPORTATION DATA

DOT PROPER SHIPPING NAME CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
(CONTAINS FERRIC SULFATE/SULFURIC ACID)

HAZARD CORROSIVE MATERIAL

UN/NA# UN3264

DOT REPORTABLE QUANTITY (RQ) 294 GL **Pkg Grp** II

IMO NAME CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. UN3264

IMO Class/Sub Class CORROSIVE

UN/NA# UN3264 **Pkg Grp** II

IATA NAME FORBIDDEN- VENTED CONTAINER

IATA Cls/Sub Cls

UN/NA# 000000 **Pkg Grp**

EXPORT LICENSE MAY BE REQUIRED TO EXPORT THIS PRODUCT

SECTION 12 :- GENERAL STORAGE DATA

STORAGE TEMPERATURE : Maximum: 120.00°F 48.8°C Minimum: 37

Material should be stored in the properly sealed original container
ACIDS/ALKALI: Acid containing material should be stored seperate from alkaline materials and cyanides. CORROSIVE MATERIAL: Corrosive materials must not be stored above, below or adjacent to: flammables or oxidizers.

SECTION 13 :- REGULATORY DATA

The following regulations apply to this product.

FEDERAL REGULATIONS

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200:
Based on our evaluation, the following ingredients in this product are subject to this rule:

Chemical Name	CAS#	By Weight%	OSHA-PEL	ACGIH-TLV
Ferric sulfate	10028-22-5	15 - 25	N/A	N/A
Nitric acid	7697-37-2	3 - 5	2 PPM	2 PPM
Sulfuric acid	7664-93-9	12 - 16	1 MG/M3	1 MG/M3

CERCLA/SUPERFUND, 40 CFR 117, 302/304 : Notification of spills of this product is required

SARA/SUPERFUND AMENDMENTS & REAUTHORIZATION ACT OF 1986 (TITLE III)

Sections 302, 311, 312 & 313

SECTION 302 : Extremely Hazardous Substances
This product contains ingredient(s) listed in APPENDIX A of 40 CFR as extremely hazardous substance.

Ingredient	CAS#	By Weight %
Nitric acid	7697-37-2	3 - 5
Sulfuric acid	7664-93-9	12 - 16

SECTIONS 311 & 312 - M.S.D.S REQUIREMENTS (40 CFR 370)

This product contains ingredient(s) that may require reporting under Hazardous Chemical Inventory Reporting

X Immediate (Acute) health hazard X Delayed (Chronic) health hazard
Fire hazard _ Sudden release of pressure hazard
Reactive Hazard

Under Section 311, submittal of MSDS or a list of product names to the local emergency planning commission, state emergency response commission, the local fire department is required after October 17, 1987. Consult the regulation for pertinent changes and updates.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372)
This product does not contain ingredient(s) listed under 40 CFR 372.65

Ingredient	CAS#	By Weight %
Nitric acid	7697-37-2	3 - 5
Sulfuric acid	7664-93-9	12 - 16

TOXIC SUBSTANCE CONTROL ACT (TSCA)

TOXIC SUBSTANCE CONTROL ACT (TSCA): The chemical ingredient(s) in this product are listed on the 8(b) Inventory List (40 CFR 710).

RESOURCE CONSERVATION & RECOVERY ACT (RCRA), 40 CFR 261 SUBPARTS C & D

Please refer to section 10, disposal information for pertinent

data.

TOTAL TOXIC ORGANICS
This product does not contain ingredient(s) on the list of Total Toxic Organics.

OSHA PROCESS SAFETY (1910.119)
This product does not contain ingredient(s) listed in APPENDIX A of 29 CFR 1910.119 of Highly Hazardous Chemicals, Toxics, and Reactives of OSHA process safety management.

CLEAN AIR ACT
This product contains ingredient(s) listed on the Hazardous Air Pollutants of CAA 40 CFR 112(G).

Ingredient	CAS#	By Weight %
Nitric acid	7697-37-2	3 - 5

OZONE DEPLETING SUBSTANCES

This product does not contain ingredient(s) listed on Ozone Depleting Substances of CAA 40 CFR 82.

STATE REGULATIONS

CALIFORNIA PROPOSITION 65

This product does not contain ingredient(s) listed on California Prop 65 suspected carcinogen List.

MICHIGAN CRITICAL MATERIALS
This product does not contain ingredient(s) listed on the Michigan Critical Material Register.

The information listed above does not include all Federal, State, and International regulations. The regulations listed above may change from time to time; it is the users responsibility to keep advised of current regulatory requirements.

Prepared by MacDermid Inc. Safety & Regulatory Compliance Department, based upon publicly available reference information.

▼SECTION 14 :- USER NOTIFICATION

To the best of our knowledge the information contained herein is correct. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. Users of any chemical should satisfy themselves that the conditions and methods of use assure that the chemical is used safely. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER NATURE ARE MADE HERE UNDER WITH RESPECT TO THE INFORMATION

CONTAINED HEREIN OR THE CHEMICAL TO WHICH THE INFORMATION REFERS.

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MATERIAL SAFETY DATA SHEET

Post-it® Fax Note 7671 | Date 1/5/01 | # of pages ▶
To Dyckes | From Rose
Co./Dept. Aluminum Dip | Co. HCI
Phone # | Phone # 818-897-4679
Fax # 941-5927 | Fax #

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Nitric acid 42 Be
HCI PRODUCT ID NUMBER: 02008
SYNONYMS: None
CHEMICAL FAMILY NAME: acids, inorganic

NFPA HAZARD RATINGS (H-F-R): 4-0-0
HMIS HAZARD RATINGS (H-F-R): 4-0-0

DISTRIBUTOR: HCI U.S.A. DISTRIBUTION COMPANIES, INC.
TECHNICAL RESOURCE CENTER
6529 S. BROADWAY
ST. LOUIS, MO 63111
(314) 353-6500

IN CASE OF EMERGENCY CALL: CHEMTREC 1-800-424-9300

2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT	CAS No.	PERCENT
Nitric acid	007697-37-2	67.18

Trace impurities and additional material names not listed above may also appear in the Regulatory Information Section (Section 15) towards the end of the MSDS. These materials may be listed for local "Right to Know" compliance and for other reasons.

3. HAZARDS IDENTIFICATION

********** EMERGENCY OVERVIEW **********

Danger!
Liquid is corrosive to eyes and skin.
Harmful if inhaled.
Harmful or fatal if swallowed.

Continued

11

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POTENTIAL HEALTH EFFECTS

SKIN: Contact with the skin can cause severe irritation or burns. This material causes destruction of body tissue.

EYES: Contact with the eyes may result in severe irritation and perman injury may occur.
Contact with the eyes may cause burns, tearing, and blindness.

INGESTION: Ingestion may cause severe irritation or burns of the mucous membranes of the mouth, throat, esophagous, and stomach.
Ingestion can cause severe abdominal distress and may be fatal.

INHALATION: Inhalation of dusts or mists can damage upper respiratory tract and lung tissue depending on the extent of exposure.

Components found on one of the OSHA designated carcinogen lists are listed below.

INGREDIENT	NTP	IARC	OSHA
Nitric acid	N	N	N

This product does not contain any chemicals reportable under California Proposition 65.

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4. FIRST AID MEASURES

SKIN CONTACT: Remove contaminated clothing and shoes.
Wash exposed areas with soap and water.
Call a physician if irritation persists.

EYE CONTACT: Flush eyes with water for at least 15 minutes.
Get immediate medical attention.

INGESTION: Do not induce vomiting. Give 1-2 glasses of water to dilute. I vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.
Do not give anything by mouth to an unconscious person.
Get immediate medical attention.

INHALATION: Remove to fresh air.
If breathing has stopped, give artificial respiration.
Get medical attention.

Continued

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5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSIVE PROPERTIES

FLASHPOINT:	N/AP
FLASH POINT METHOD:	N/AP
LOWER FLAMMABILITY LIMIT(% IN AIR):	N/AP
UPPER FLAMMABILITY LIMIT(% IN AIR):	N/AP
AUTOIGNITION TEMPERATURE:	N/AP
FLAMMABILITY CLASSIFICATION:	N/AP

EXTING. MEDIA: Use water spray, carbon dioxide, dry chemical, or foam.

FIRE FIGHTING: Use NIOSH-approved self-contained breathing apparatus and comp protective clothing when fighting chemical fires.
Use fog nozzles if water is used.
Avoid inhalation of smoke and fumes.
Water spray may be ineffective on fire but can be used to prot fire fighters and cool closed containers.

FIRE HAZARDS: Closed containers of this product may explode when exposed to excessive heat.
Exposure to heat may promote violent decomposition.

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6. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS: Neutralize with sodium bicarbonate or equal parts of soda ash slaked lime.
Contain spill and ventilate area. Sweep up and containerize f disposal.

LARGE SPILLS: Contain spill and ventilate area. Permit only trained personn wearing full protective equipment to enter the spill area. Cc the spill in a waste container or remove with a vacuum truck.
Prevent spill from entering natural watercourses.

Wear complete protective clothing when cleaning up chemical spills.

Spills and releases may have to be reported to federal and/or local authorities. See the Regulatory Information section (section 15) regarding reporting requirements.

Continued

7. HANDLING AND STORAGE INFORMATION

HANDLING: Avoid contact with skin, eyes, and clothing.
Avoid breathing product vapors and mists.
Do not take internally.
Wash thoroughly after handling this material.

STORAGE: Keep container closed when not in use.
This material should be stored at moderate temperatures.
This material should be stored in well ventilated areas.
Store in a cool, dry place.
The empty container is hazardous.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS

Good general ventilation (typically 10 air changes/hour) should be used. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

SKIN: Wear protective gloves made of neoprene or rubber.

EYES: Wear chemical safety goggles.

RESPIRATORY: If engineering controls do not maintain airborne concentrations below recommended limits, wear a NIOSH-approved respirator for dusts and mists.

OTHER: Emergency showers, eye-wash stations, and fire blankets should b accessible. Wear protective clothing.

EXPOSURE GUIDELINES

INGREDIENT	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA S
Nitric acid	2 ppm	4 ppm	2 ppm	4 ppm

v = vacated by 58 FR 35338, June 30, 1993

See 29 CFR 1910.1000 (D)(2) and ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" booklet (Appendix C) for the determination of exposure limits for mixtures. Consult an industrial hygienist or similar professional to confirm that the calculated exposure limits are appropriate.

Continued

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9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
APPEARANCE:	Clear, colorless, fuming
ODOR:	Sharp & pungent
MOLECULAR WEIGHT:	N/AV
SPECIFIC GRAVITY:	1.4 @ 60 F
SOLUBILITY (IN WATER):	Soluble
BOILING POINT:	250 F 121.1 C
FREEZING POINT:	N/AV
MELTING POINT:	N/AV
PRODUCT pH (@ 23 C):	N/AV
VAPOR PRESSURE:	5.5mmHg @ 20 C
VAPOR DENSITY:	1.7
EVAPORATION RATE (BUTYL ACETATE=1):	< ether
% VOLATILES:	<40%

---

10. STABILITY AND REACTIVITY INFORMATION

STABILITY: Stable

COND. TO AVOID: None known

INCOMPATIBILITY: Organic materials, reducing agents, strong alkalies

DECOMPOSITION: Combustion generates acid vapors.
Combustion generates toxic oxides of nitrogen.

POLYMERIZATION: Polymerization will not occur.

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11. TOXICOLOGICAL INFORMATION

IMMEDIATE EFFECTS

This material is highly toxic by inhalation.
Medical conditions aggravated include respiratory problems, skin disorders and allergies.
LC50: 49 ppm/4 hour(s) - inhalation - rat
LC50: 2500 ppm/1 hour(s) - inhalation - rat
LD50: 50-500 mg/kg - oral - unspecified species
LDLo: 430 mg/kg - oral - human
LDLo: 110 mg/kg - unreported - man
TCLo: 1071 ug/m3/24 hour(s)-84 day(s) continuous inhalation - rat

Continued

DELAYED EFFECTS (CHRONIC AND SUBCHRONIC)

CARCINOGENICITY: No data available

MUTAGENICITY: No data available

EPIDEMIOLOGY: No data available

TERATOGENICITY: No data available

REPRODUCTIVITY: 21150 mg/kg oral-rat TDLo 1-21 day(s) pregnant female continuc
2345 mg/kg oral-rat TDLo 18 day(s) pregnant female continuous

NEUROTOXICITY: No data available

---

12. ECOLOGICAL INFORMATION

Fish toxicity: 2.8 ug/L 96 hour LC50 (mortality) Rainbow Trout, Donaldson Trout (Oncorhynchus mykiss)
Invertebrate toxicity: 16 ug/L 48 hour EC50 (immobilization) Water Flea (Daphnia magna)
Fate and Transportation:
Bioconcentration: 17560 ug/L 30 hour BCFD (residue) Aquatic Sowbug (Asellus aquaticus) 0.87 ug/L

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13. DISPOSAL CONSIDERATIONS

RCRA WASTE: Yes
RCRA ID NUMBER: D002

VOC CONTENT (lbs/gal): N/AV

Discharge, treatment, or disposal may be subject to Federal, State, or Local laws. State and Local regulations and restrictions are complex and may differ from Federal disposal regulation.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA Classification and the proper disposal method.

Continued

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14. TRANSPORTATION INFORMATION

DOT SHIPPING NAME: Nitric acid

DOT HAZARD CLASS: 8
DOT ID NUMBER: UN2031
DOT PACKING GROUP: II
OTHER: Labels required: Corrosive

IMDG HAZARD CLASS: 8

ICAO HAZARD CLASS: 8

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15. REGULATORY INFORMATION

CERCLA "REPORTABLE QUANTITY" (RQ): 1489 lbs. (Nitric acid)

Spills/releases resulting in the loss of this product at or above its RQ requires immediate notification to the National Response Center (1-800-424-8802) and to your Local Emergency Planning Committee.

TSCA

TSCA INVENTORY STATUS: Yes
OTHER TSCA ISSUES: Subject to export notification

SARA TITLE III

INGREDIENT	SECTION 313	SECTION 302
Nitric acid	yes	yes

SECTION 311/312 HAZARD CLASS: Immediate (acute) health hazard.
Fire hazard.

Reactive hazard.

WHMIS CLASSIFICATION (CANADA)

Class E

Continued

FOREIGN INVENTORY STATUS

EINECS (European Inventory of Existing Commercial Chemical Substances)

ADDITIONAL REGULATORY INFORMATION

This product does not contain any chemicals reportable under California Proposition 65.

MASSACHUSETTS SUBSTANCE LIST:
No data available

NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST:
Nitric acid

PENNSYLVANIA HAZARDOUS SUBSTANCE LIST:
Nitric acid

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16. OTHER INFORMATION

CREATION DATE: 03/18/1997
REVISION DATE: 03/18/1997

The information herein is presented in good faith and is believed to be correct as of the date hereof. However, HCI makes no representation as to the completeness and accuracy thereof. Users must make there own determination as to the suitability of the product for their purposes prior to use.

No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose, or of any other nature with respect to the product or to the information herein is made hereunder. HCI shall in no event be responsible for any damages of whatsoever nature directly or indirectly resulting from the publication, or use of, or reliance upon the information contained herein.

End of Document

Date: 3/18/92 Previous Date: NEW MSDS
Changes: (Y) N F... Comments: Y (N)
R 65 Warning: Y (N) "Safe Harbor": Y N
D.O.T. Changes: Y (N)
Checked By: Steve Brookshaw
Date: 1/19/99

14) NSAC

Surf-Chem
div. Environmental Treaters, Inc.
17622 Metzler Lane
Huntington Beach, California 92647
(714) 375-4212

MATERIAL SAFETY DATA SHEET

Emergency 24 Hour Telephone Number (800) 424-9300

Section I

Chemical Name and Synonyms	Sodium Tetraborate- Borax
Trade Name and Synonyms	NSAC
Chemical Family	Sodium salt
Formula	$Na_2B_4O_7 \cdot 10\ H_2O$

Section II Ingredients

		%	TLV
Borax	cas RN 1303964	> 98	5mg/m³
TRITON N-101	RN 127087-87-0	< 2	None

Section III Physical Data

Boiling Point (F°)	N/A	Specific Gravity (H_2O = 1)	2.37
Vapor Pressure (mm Hg)	N/A	Percent Volatile by volume (%)	N/A
Vapor Density (Air =1)		Evaporation Rate (_____=1)	N/A
Solubility in Water	Slightly		
Appearance and Odor	White crystal-odorless		

Section IV Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
N/A	N/A		

Extinguishing Media

Water

Special Fire Fighting Procedures

None

Unusual Fire and Explosion Hazards

NONE

POSTED

4/9/96

Surf-Chem
div. Environmental Treaters, Inc.

MATERIAL SAFETY DATA SHEET

Section V Health Hazard Data

Threshold Limit Value	5 mg/m^3
Effects of Overexposure	Vomiting and diarrhea
Emergency and First Aid Procedures	Oral- induce vomiting/ Exterior-wash with soap and water

Section VI Reactivity Data

Stability	Unstable	Conditions to Avoid	None
	Stable X		
Incompatability *(Materials to Avoid)*	None		
Hazardous Decomposition Products	Na_2O		
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	None

Section VII Spill or Leak Procedures

Steps to be Taken in Case Material is Released or Spilled

Contain, bag and ship offsite

Waste Disposal Method

May be disposed of in a Class 2 Land Fill

Section VIII Special Protection Information

Respiratory Protection (Specify type)	Dust mask		
Ventilation	Local Exhaust	Special	None
	Mechanical (General) Recommended	Other	
Protective Gloves	Rubber Gloves	Eye Protection	Goggles
Other Protective Equipment	None		

Section IX Special Precautions

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Store Dry

OTHER PRECAUTIONS

None

15) Sodium Tetroborate - Borax

Surf-Chem
dba. Environmental Treaters, Inc.
17622 Metzler Lane
Huntington Beach, California 92647
(714) 375-4212

MATERIAL SAFETY DATA SHEET

Emergency 24 Hour Telephone Number (800) 424-9300

Section I

Chemical Name and Synonyms	Sodium Tetraborate- Borax
Trade Name and Synonyms	NSAC
Chemical Family	Sodium salt
Formula	$Na_2B_4O_7 \cdot 10\,H_2O$

Section II Ingredients

		%	TLV
Borax	cas RN 1303964	> 98	5mg/m³
TRITON N-101	RN 127087-87-0	< 2	None

Section III Physical Data

Boiling Point (F°)	N/A	Specific Gravity (H_2O = 1)	2.37
Vapor Pressure (mm Hg)	N/A	Percent Volatile by volume (%)	N/A
Vapor Density (Air =1)		Evaporation Rate (_____=1)	N/A
Solubility in Water	Slightly		
Appearance and Odor	White crystal-odorless		

Section IV Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
N/A	N/A		

Extinguishing Media

Water

Special Fire Fighting Procedures

None

Unusual Fire and Explosion Hazards

NONE

POSTED

9/4/96

Surf-Chem
div. Environmental Treaters, Inc.

MATERIAL SAFETY DATA SHEET

Section V Health Hazard Data

Threshold Limit Value	5 mg/m³
Effects of Overexposure	Vomiting and diarrhea
Emergency and First Aid Procedures	Oral- induce vomiting/ Exterior-wash with soap and water

Section VI Reactivity Data

Stability	Unstable	Conditions to Avoid	None
	Stable X		
Incompatability *(Materials to Avoid)*	None		
Hazardous Decomposition Products	Na_2O		
Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	None

Section VII Spill or Leak Procedures

Steps to be Taken in Case Material is Released or Spilled

Contain, bag and ship offsite

Waste Disposal Method

May be disposed of in a Class 2 Land Fill

Section VIII Special Protection Information

Respiratory Protection (Specify type)	Dust mask		
Ventilation	Local Exhaust	Special	None
	Mechanical (General) Recommended	Other	
Protective Gloves	Rubber Gloves	Eye Protection	Goggles
Other Protective Equipment	None		

Section IX Special Precautions

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Store Dry

OTHER PRECAUTIONS

None

GREEN POWER CHEMICAL
P.O. BOX 507 – STANHOPE, NJ 07874
800-932-9371 * 973-770-5600 * Fax 973-770-1158

"LEADERS IN ENVIRONMENTALLY SAFE PRODUCTS"

MATERIAL SAFETY DATA SHEET

Total Aqueous Systems Cleaner

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

SECTION I: Identity - TASC
Green Power Chemical Environmental Services Group, January 18, 2013

SECTION II: Hazardous Ingredients - Identity Information
Sodium Carbonate C.A.S. # 5968-11-6 | Sodium Metasilicate C.A.S. # 6834-92-0 | Tetrasodium EDTA C.A.S. # 64-02-8
These ingredients are irritants but are non-toxic and biodegradable.

SECTION III: Physical / Chemical Characteristics
Boiling Point: N/A | Specified Gravity (H2O=1): N/A | Vapor Pressure (MM Hg): N/A | Melting Point: N/A
Vapor Density (AIR=1): N/A | Evaporation Rate: N/A | Appearance & Odor: Aqua/Blue Powder/Odorless

SECTION IV: Fire & Explosion Hazard Data
Flash Point: None | Extinguishing Media: Water | Special Fire Fighting/Unusual Fire & Explosion Hazards: None

SECTION V: Reactivity Data
Stability: Stable | Conditions to Avoid: None | Incompatibility (Materials to Avoid): Strong Acids
Hazardous Decomposition or Byproducts: None | Hazardous Polymerization: Will not occur | condition to Avoid: None

SECTION VI: Health Hazard Data
Routes of Entry: Inhalation: X - Skin: X - Ingestion: X
Health Hazards (Acute and Chronic): Irritation of the eyes or skin
Carcinogenicity: NTP: No - IARC Monographs: No - OSHA Regulated: NO
Signs and Symptoms of Exposure: Skin irritation
Medical Conditions. Generally Aggravated by Exposure: Dermatitis
Emergency and First Aid Procedures: Eyes or skin: Flush with water - Inhalation: Remove to fresh air
Ingestion: Drink plenty of water, get medical attention

SECTION VII: Precautions for Safe Handling and Use
Steps to be taken in case material is released or spilled: Flush with water
Waste disposal method: According to Federal, State & Local regulations
Precautions to be taken in handling and storing: Keep container dry | Other precautions: None

SECTION VIII: Control Measures
Respiratory Protection (specify type): None required | Protective Gloves: Rubber | Eye Protection: Goggles
Ventilation: Local Exhaust: Acceptable - Mechanical: Not required - Special/Other: None
Other Protective Clothing or Equipment: None required | Work/Hygienic Practices: Wash with soap and water after use
NOTE: HMIS Ratings: Health: 1 - Flammability: 0 - Reactivity: 0 - PH: 11

ATTACHMENT IV

REGULATORY CORRESPONDENCE

1988-NOVEMBER - USEPA FACILITY ASSESSMENT AND NFA REVIEW
1996-DECEMBER - RWQCB GROUNDWATER INVESTIGATION AND NFA REVIEW
1997-OCTOBER - USEPA EVALUATION AND NFA REVIEW
2007-MARCH - USEPA CWA INSPECTION REPORT
2013-AUGUST - CITY OF BURBANK WASTEWATER INSPECTION

ALUMINUM DIP BRAZE CO.
2537 N. ONTARIO ST.
BURBANK, CA 91504
WILLIAM R. VAZZANA
(818) 845-6964

REPORT DATE: 11/16/88
SUBJECT: REPORT REVIEW
FILE NO. AB104.0086

J. M. HOSTAK

Review of the report prepared by EMCON indicates low levels of aromatic VOC's, toluene: 6 ppb, and xylenes: 30-40 ppb, in the two near surface soil samples. These concentrations are unlikely to pose a threat to deep gw. High and variable concentrations of Al (339-1320 ppm) and Li (34.9-168 ppm) in samples suggest discharge of wastes, although neither compound is currently addressed by regulatory objectives/limits. Soil sample concentrations for halides range as Cl-: 55-305 ppm, and F-: 92.1-190 ppm. The EPA Drinking Water MCL's are Cl-: 250 ppm, and F- :4.0 ppm. Average gw values reported by the Watermaster for the area are Cl-: 20-38 ppm, and, F-, 0.2-9.6 ppm. No data on soil background concentrations were available. Cl- is highly mobile in soil due to negligible sorption. F-, however, has a high precipitation potential in the presence of metals, especially in relatively dry soils. This information, combined with the comparatively great depths to gw, suggests that the apparent waste discharge to soils poses little threat to groundwater quality.

RECOMMENDATIONS: Assign NFA priority 3; to be reassessed in the future if deemed necessary.

11/23/88
DAB

STATE OF CALIFORNIA—ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, *Governor*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

December 27, 1996

Mr. William R. Vazzana
Aluminum Dip Braze, Co.
2537 N. Ontario St.
Burbank, CA 91504

SAN FERNANDO VALLEY CLEANUP PROGRAM - **NO FURTHER REQUIREMENTS** FOR ALUMINUM DIP BRAZE CO., LOCATED AT 2537 N. ONTARIO ST., BURBANK, (FILE NO. 104.0086)

Regional Board staff have reevaluated your case. Based on the available information in our file and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to this Board's Well Investigation Program is required.

It should be noted that this letter in no way releases you from any chemicals and/or waste handling requirements of this or any other agency.

If you have any questions regarding this matter, please contact me at (213) 266-7538.

Sincerely,

Jonathon Bishop
Senior Water Resource
Control Engineer

cc: Mr. Mike Osinski, USEPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

October 31, 1997

ALUMINUM DIP BRAZE CO.
2537 ONTARIO ST.
BURBANK, CA 91504
File Number: 104.0086

RE: SAN FERNANDO VALLEY SUPERFUND AREAS U.S. EPA AND LARWQCB NOTIFICATION OF NO FURTHER ACTION

For property located at: 2537 ONTARIO ST.
BURBANK, CA 91504-

Dear Owner/Operator,

The California Regional Water Quality Control Board, Los Angeles Region ("Regional Board") staff has conducted an assessment of your facility to determine the extent of solvent usage and to assess past and current chemical handling, storage and disposal practices. Your company is among those in the San Fernando Valley which have received the Regional Board's "No Further Action" letters based on one or more of the following categories: 1) information provided in your pre-inspection questionnaire disclosed little or no solvent use; 2) the results of a staff inspection disclosed little or no solvent use; or 3) completed assessment work indicated insignificant or no solvent contamination in soil.

The purpose of this letter is to inform you that, based on the information provided to U.S. EPA by the Regional Board to date, you will not be asked by the U.S. EPA or the Regional Board to participate in regional groundwater cleanup projects currently planned for San Fernando Valley. Your company is no longer part of the U.S. EPA Superfund process, and the Regional Board and U.S. EPA plan no further action concerning your facility.

You may be contacted by those potentially responsible parties ("PRPs") that have been asked to participate in the groundwater cleanup efforts. In the event you are contacted by PRPs, please feel free to contact the appropriate Regional Board or U. S. EPA staff for additional information or assistance. The telephone numbers of Regional Board and U. S. EPA staff are provided on the enclosed contact list.

Sincerely,

Keith A. Takata
Director
Superfund Division
U. S. EPA, Region 9

Dennis A. Dickerson
Executive Officer
California Regional Water Quality
Control Board, Los Angeles Region

Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

March 11, 2007

In Reply Refer To: WTR-7

Joe Belanger, General Manager
Aluminum Dip Brazing Industries
2537 North Ontario Street
Burbank, California 91504-25925

Re: September 5, 2006 Clean Water Act Inspection

Dear Mr. Belanger:

Enclosed is the March 11, 2007 report for our inspection of Aluminum Dip Brazing. Please submit a short response to the findings in Sections 2 through 5 of this report, to EPA, Burbank, and the Regional Water Quality Control Board, by **May 30, 2007**.

The main findings are summarized below:

1 Aluminum Dip Brazing does not qualify as job-shop because it owns more than half of the parts and fabrications brazed. As a result, the Federal standards for metal finishing in 40 CFR 433 apply instead of the abbreviated and less stringent standards for existing job-shop metal finishers discharging less than 10.000 gpd in 40 CFR 413.

2 Aluminum Dip Brazing provides no treatment for chromium. Dilution is the likely explanation of past compliance with Federal standards. Separate sampling points should be established for Federal standards, which prohibit dilution, and local limits, which do not.

3 Cooling water use determines rinsing rates. This violates the Federal prohibition against dilution as a substitute for treatment and renders sampling unusable to determine compliance with Federal standards. The rinses should be operated on-demand and excess cooling water should be diverted past the sampling point for Federal standards.

I certainly appreciate the helpfulness extended to me by yourself and your staff during this inspection. I remain available to you and Burbank to assist in any way. Please call (415) 972-3504 or e-mail at arthur.greg@epa.gov.

Sincerely,

Greg V. Arthur
CWA Compliance Office

Enclosure

cc: Kristy Laird, United Water, Burbank
Dan Radulescu, RWQCB-Los Angeles

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User:	Aluminum Dip Brazing Industries 2537 North Ontario Street, Burbank, California 91504-2592 40 CFR 433 – Existing Source Metal Finishing
Treatment Works:	City of Burbank Water Reclamation Plant (NPDES Permit CA0055531)
Date of Inspection:	September 5, 2006

Inspection Participants:	
US EPA:	Greg V. Arthur, Region 9, CWA Compliance Office, (415) 972-3504
RWQCB-Los Angeles:	None
City of Burbank:	Kristy Laird, United Water, Source Inspector, (818) 972-1115 ex23 Jeff Carter, United Water, Source Manager, (818) 972-1115 ex17
Aluminum Dip Brazing:	Joe Belanger, General Manager, (818) 841-5927

Report Prepared By:	Greg V. Arthur, Environmental Engineer March 11, 2007

1.0 Scope and Purpose

On September 5, 2007, EPA, and the City of Burbank conducted a compliance evaluation inspection of Aluminum Dip Brazing in Burbank, California. The purpose was to ensure compliance with the Federal regulations covering the discharge of non-domestic wastewaters into the sewers. In particular, it was to ensure:

- Classification in the proper Federal categories;
- Application of the correct standards at the correct sampling points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

Aluminum Dip Brazing is a significant industrial user ("SIU") within the Burbank sewer service area whose compliance was assessed as part of an on-going EPA evaluation of industrial users in EPA Region 9 by sector. The inspection participants are listed on the title page. Arthur conducted the inspection on September 5.

1.1 Process Description

Aluminum Dip Brazing is a metals fabrication shop that has the added capability to perform a form of aluminum welding in a molten salt bath known as dip brazing. The basis materials include aluminum, steel, stainless steel, and other steel alloys such as inconel. According to the General Manager, 70% of the dip brazed assemblies are fabricated on-site and thereby owned for sale by Aluminum Dip Brazing, with the remaining 30% of the work consisting of job-shop brazing of fabrications and parts it does not own.

The operations involve machining, welding, CNC drilling, grinding, machining, and sheet metal work in the Machining Bldg 2537. The operations in the Dip Braze Bldg 2523 comprise spot welding, pre-heating, salt bath dip brazing, air quench, spray water quench, desalt washing, and a [redacted] The conversional coating line consists of alkaline cleaning, alkaline degreasing, caustic etching, hydrofluoric/nitric-acid deoxidation, nitric-acid desmut, and chem film conversion coating. Pertinent support operations include chemical storage, mop water evaporation, and DI-water production.

Aluminum Dip Brazing began operations in 1972 with no significant changes in operational configuration since then. Aluminum Dip Brazing discharges non-domestic wastewaters to the Burbank domestic sewers through a single sewer connection designated in this report by permit number as IWD-1003. Domestic sewage discharges through separate connections downstream of the industrial wastewater connection.

1.2 Facility SIC Code

Aluminum Dip Brazing is assigned the SIC codes for aircraft parts (SIC 3728) and for electroplating, plating, polishing, anodizing, and coloring of metals (SIC 3471).

1.3 Facility Wastewater Sources

The dip brazing and chem film lines generate spents, rinses, and residuals. The support operations also generate washdowns and other wastewaters. The tanks are referenced in this report are by the shop designations. ***See*** Appendix 1.

Spent Solutions – The imparted contamination from the processing of parts and the progressive drop in solution strength results in the generation of spent solutions. Every quarter, Aluminum Dip Brazing hauls off-site for disposal the spents from the chem film line. Everything else is regenerated through additions. The list of spents follows below.

On-Site Batch Treatment	Hauled Off-site to Haz	Regenerated By Additions
none	T1 - alkaline cleaning T2 - HF/HNO_3-acid deox T3 - alkaline degreasing T4 - caustic etch T6 - HF/HNO_3-acid deox T9 - HNO_3-acid desmut T11 - chem film	Molten Salt Bath Dip
n/a	U.S. Filter	No Release

Rinses and Washwaters – Aluminum Dip Brazing generally employs first-stage static and second-stage continuously overflowing rinses dedicated to specific solution tanks. The continuously overflowing rinses discharge through a limited settling unit. Single-pass cooling water for spot welding and non-contact molten salt bath electrode are directed to other on-site uses prior to discharge. Mop waters and air compressor condensate are handled on-site through evaporation. The list of rinses follows below.

Continuous Overflows	Static Rinses	Other Wastewaters
T7 - 2° for T6 deox T12 - 2° for T11 chem film T13 - 1° desalt washing	T5 - 1° for T4/9 desmut/etch T8 - 1° for T6 deox T14 - 1° for T11 chem film	Salt spray quench to T13 Spot weld cooling to T12 Electrode cool to T7/12/13 Mop water ✓ Compressor condensate ✓ ✓ to on-site evaporation
Discharged to IWD-1006	U.S. Filter	On-site Reuse/Disposal

Residuals – Residuals such as evaporation slurry, spent machining coolant, and spent adsorbent for floor clean-up are hauled off-site as hazardous to U.S. Filter. Machine shop and sheet metal chips and scrap are hauled for off-site reclaim.

Reuse – Single-pass non-contact cooling water for the molten salt bath electrode is reused as the make-up water for the continuous overflowing rinses.

1.4 Facility Process Wastewater Composition

The process wastewaters listed in section 1.3 above would be expected to contain salts, aluminum, copper, chromium, lead, nickel, zinc, total cyanide, and acidity, as well as oil & grease, surfactants, iron, suspended solids, and other pollutants in the surface grime cleaned off of parts.

1.5 Facility Process Wastewater Treatment

Aluminum Dip Brazing provides only solids settling of the overflowing rinses that discharge to the sewers. There is no treatment for the removal of metals or complexed cyanide, or a final pH adjustment. Air compressor condensate and mop waters are filtered through a filter press prior to on-site evaporation. Otherwise, there are no other wastewater treatment steps provided on-site. ***See*** Appendix 1.

Operational Controls – Since no treatment is provided for the removal or cyanide or the adjustment of pH, there are no operational controls.

Sewer Discharge – The final discharge connection to the sewer is designated as the permitted compliance sampling point, IWD-1003.

1.6 POTW Legal Authorities

The City of Burbank – Burbank operates its own wastewater treatment plant, which discharges to the Los Angeles River. Burbank also operates an approved pretreatment program as required by the State of California in the Los Angeles RWQCB's Waste Discharge Requirements, No. R4-2006-0085, reissued to Burbank in 2006 and serving as NPDES Permit No. CA0055531. Burbank has established a sewer use ordinance that applies to all industrial users within its city limits. Under this authority, Burbank issued industrial user permit No.1003 covering the sewer discharge from Aluminum Dip Brazing.

1.7 Photo Documentation

No photographs were taken during this inspection.

1.8 Sampling Record

All compliance samples are collected by Burbank from the final settling tank within the facility at IWD-1003. ***See*** Appendix 3 for a summary of the 2003-2006 sampling.

2.0 Sewer Discharge Standards and Limits

Federal categorical pretreatment standards (where they exist), national prohibitions, and the local limits (where they exist) must be applied to the sewered discharges from industrial users. (40 CFR 403.5 and 403.6).

Summary

The Federal standards in 40 CFR 433 for existing source metal finishers apply to all process wastewater discharges from Aluminum Dip Brazing through IWD-1003. The Burbank permit incorrectly applied the abbreviated and less stringent Federal standards in 40 CFR 413 for job-shop metal finishers discharging under 10,000 gallons per day. The Burbank permit correctly applies local limits. The application of Federal standards, national prohibitions, and local limits was determined through visual inspection. *See* Appendix 2.

Requirements

- The Federal standards in 40 CFR 433 for existing source metal finishers must be applied to the discharges from Aluminum Dip Brazing.

Recommendations

- Aluminum Dip Brazing should submit a report detailing the construction involved in the installation of secondary containment in the mid-1980s, and the installation of any new lines since then.

2.1 Classification by Federal Point Source Category

Aluminum Dip Brazing qualifies as an existing source metal finisher subject to the Federal metal finishing standards in 40 CFR 433. Burbank incorrectly classified Aluminum Dip Brazing as an existing source job-shop metal finisher subject to the Federal electroplating standards in 40 CFR 413 for dischargers of less than 10,000 gpd. The metal finishing standards are more stringent and cover an expanded set of pollutants. Federal standards are self-implementing which means they apply to regulated waste streams whether or not they are implemented in a local permit. The Federal rules in 40 CFR 403.6 define domestic sewage and non-contact wastewaters to be dilution waters.

New or Existing Sources – Aluminum Dip Brazing continues to be subject solely to the Federal standards for existing sources. Under the definitions in 40 CFR 403.3(k), a process constructed at an existing source job-shop metal finisher after August 31, 1982 is a new source (1) if it entirely replaces a process which caused a discharge from an existing source or (2) if it is substantially independent of the existing sources on-site. This means new source standards apply to the original installation of the metal finishing lines, rebuilt or moved lines, or existing lines converted to do new operations. This also means that the new source standards generally do not apply to the piecemeal replacement of tanks for maintenance in otherwise intact metal finishing lines, nor do they apply to treatment upgrades

without altering production. The preamble to the final 1988 Federal rule states that new source standards apply when "an existing source undertakes major construction that legitimately provides it with the opportunity to install the best and most efficient production process and wastewater treatment technologies" (*Fed Register, Vol.53, No.200, October 17, 1988, p.40601*).

According to the General Manager, there have been no configuration changes at Aluminum Dip Brazing since start-up in the 1970's. As a result, nothing qualifies for regulation under new source standards. The construction of new lines, or the physical relocation and re-installation of entire lines, even if part of the installation of secondary containment, would qualify as construction that "legitimately provides it with the opportunity to install the best and most efficient production process and wastewater treatment technologies".

2.2 Local Limits and National Prohibitions

Local limits and the national prohibitions are meant to express the limitations on non-domestic discharges necessary to protect the sewers, treatment plants and their receiving waters from adverse impacts. In particular, they prohibit discharges that can cause the pass-through of pollutants into the receiving waters or into reuse, the operational interference of the sewage treatment works, the contamination of the sewage sludge, sewer worker health and safety risks, fire or explosive risks, and corrosive damage to the sewers. The national prohibitions apply nationwide to all non-domestic sewer discharges. The Burbank local limits apply to non-domestic discharges within the Burbank city limits.

2.3 Federal Categorical Pretreatment Standards Existing Source Metal Finishing - 40 CFR 433.15

40 CFR 433.15	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO
daily-maximum (mg/l)	0.69	2.77	3.38	0.69	3.98	0.43	2.61	1.20	0.86	2.13
month-average (mg/l)	0.26	1.71	2.07	0.43	2.38	0.24	1.48	0.65	0.32	-

Applicability - Under 40 CFR 433.10(a), the metal finishing standards apply to Aluminum Dip Brazing because the facility's operations involve chemical coating, and etching. The metal finishing standards "... apply to plants that perform ..." the core operations of electroplating, electroless plating, etching, anodizing, chemical coating, or printed circuit board manufacturing and they extend to other on-site operations, such as cleaning, machining, grinding, heat treating, welding, brazing, and soldering, associated with metal finishing and specifically listed in 40 CFR 433.10(a). If any of the core operations are performed, the metal finishing standards apply to discharges from any of the core or associated operations. Under 40 CFR 433.10(c), the metal finishing standards do not apply to existing source job-shops covered by 40 CFR 413. However, the definitions in 40 CFR 433.11(c) define "job-shop" to mean "a facility (that) owns not more than 50% (annual area basis) of the materials undergoing metal finishing. As a result, Aluminum Dip Brazing does not qualify as a job-shop. Instead, the metal finishing standards apply to all of the process wastewater discharges to IWD-1003.

Basis of the Standards - The metal finishing standards were based on a model pretreatment unit that comprises metals precipitation, settling, sludge removal, source control of toxic organics, and if necessary, cyanide destruction and chromium reduction. The best-available-technology standards were statistically set where metal finishers with model treatment operated at a long-term average and variability that achieved a compliance rate of 99% (1 in 100 chance of violation).

Adjustments – The Federal standards at IWD-1003 do not need to be adjusted to account for dual Federal categories or for dilution, even though there is dilution from the continuous feed of single-pass cooling water through the rinses. This is addressed by the narrative prohibition against dilution as a substitute for treatment and not through adjustment of the standards. Under 40 CFR 433.12(c), the cyanide standards as applied to metal finishing wastewater discharges must be adjusted to account for dilution from non-cyanide bearing waste streams (Federally-regulated and unregulated). For Aluminum Dip Brazing, cyanide-bearing wastewaters are generated only by chem film. EPA estimates dilution at IWD-1003 to be ~2:1 based on the number of cyanide-bearing and non-cyanide-bearing overflow rinses. As a result, at IWD-1003, the metal finishing standards adjust downward to 0.40 mg/l daily-maximum and 0.22 mg/l monthly-average for total cyanide, and to 0.29 mg/l daily-maximum and 0.11 monthly-average for amenable cyanide.

Compliance Deadline - Under 40 CFR 433.15(f), existing source metal finishers were required to comply by the final compliance deadline of February 15, 1986.

2.4 Point(s) of Compliance

The permit designates the final settling tank inside the facility as the compliance point (designated in this report as IWD-1003).

Federal Standards - Federal categorical pretreatment standards apply end-of-process-after-treatment to all Federally-regulated discharges to the sewers. The sample point IWD-1003 is a suitable end-of-process-after-treatment sample point representative of the day-to-day discharge of Federally-regulated wastewaters. However, dilution issues support establishment of a separate sample point for Federal standards.

Local Limits - Local limits and the national prohibitions apply end-of-pipe to all non-domestic flows. The sample point designated as IWD-1003 is a suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges.

2.6 Compliance Sampling

The national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples. Federal categorical pretreatment standards are daily-maximums comparable to 24-hour composite samples. The 24-hour composite samples can be replaced with single grabs or manually-composited grabs that are representative of the sampling day's discharge.

3.0 Compliance with Federal Standards

Industrial users must comply with the Federal categorical pretreatment standards that apply to their process wastewater discharges. 40 CFR 403.6(b).

Categorical industrial users must comply with the prohibition against dilution of the Federally-regulated waste streams as a substitute for treatment. 40 CFR 403.6(d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

Summary

Aluminum Dip Brazing does not employ wastewater treatment equivalent to the models used in originally setting the Federal standards. Nevertheless, there were no violations of the Federal standards in the sample record because the wrong Federal standards were applied, and dilution causes the sampling results to be biased in favor of compliance. The Federal rules prohibit dilution as a substitute for treatment. The sampling results do indicate levels of chromium expected from a chem film line. On-demand rinsing and the diversion of excess single-pass cooling waters directly to the sewer connection would reduce the flow of process-related Federally-regulated wastewaters and proportionally increase pollutant concentrations. It is likely that best-available-technology treatment would be needed in order to comply with the Federal standards once the practice of dilution is ended. ***See*** Appendix 3.

Requirements

- Dilution from excess single-pass cooling water reused through the running rinses is prohibited by the Federal rule against dilution as a substitute for treatment.

Recommendations

- The running rinses should be operated on-demand when there are parts undergoing processing or the rinses should be retrofitted to be conductivity-controlled.

- The single-pass cooling water line should be outfitted with a diversion for excess cooling waters to the final compliance sampling point, around the running rinses, and past the limited treatment in place.

3.1 Sampling Results

The 2003-2006 sample records consist of samples collected quarterly by Burbank and semi-annually by Aluminum Dip Brazing from the last of eight settling basins inside of the facility. All metals samples were 24-hour composites. All cyanide samples were grabs. All sample results are provisionally usable for determining compliance with the Federal standards because they account for all rinses and spents discharged. However, they are only

provisionally usable because they are diluted by rinses running continuously without parts undergoing processing. Aluminum Dip Brazing is exempted from total toxic organics sampling under an approved toxic organics management plan, as set forth in 40 CFR 433. *See* item 5.0 of this report.

3.2 Best-Available-Technology Treatment

The treatment in-place is not equivalent in design and performance to the best-available-treatment ("BAT") technology models used in originally setting the Federal standards. Nevertheless, there were no violations of the Federal standards in the sample record. This can be explained in two ways. First, the less stringent and abbreviated Federal standards were incorrectly applied. Second, the results are biased in favor of compliance because the overflowing rinses run without parts undergoing processing. Excessive rinsing produces samples that are diluted by excess make-up water, a practice which is often prohibited by the Federal rule against dilution as a substitute for treatment.

The sampling results do indicate significant levels of chromium in the rinse waters as would be expected from a chem film line. On-demand rinsing and the diversion of excess single-pass cooling waters directly to the sewer connection would reduce the flow of process-related Federally-regulated wastewaters and proportionally increase pollutant concentrations. If excess cooling water constitutes more than 60% of the wastewater discharged to the sewers, the sample record for Aluminum Dip Brazing would have included at least one violation of the Federal standards for chromium.

The on-demand rinsing and diversion of excess cooling waters to the sewer connection would allow establishment of a compliance sampling point specifically for the Federal standards. This proposed sample point is designated in this report and depicted on the schematic of wastewater control in Appendix 1 as IWD-FED. *See* sections 3.3 and 5.0 and Appendix 1.

BAT treatment or its equivalent is nearly always necessary to consistently comply with Federal standards. BAT treatment would necessarily incorporate the following:

- chromium reduction, metals precipitation, and settling
- reaction end-point metering,
- the segregated batch treatment of high-strength spent solutions,
- diversion of non-compatible and low-strength wastewaters around treatment, and
- well controlled delivery methods.

3.3 Dilution as a Substitute for Treatment

The Federal standards in 40 CFR 403.6(d) prohibit "dilution as a substitute for treatment" in order to prevent compromising BAT model treatment with dilute waste streams. In particular, this prohibition applies when sample results for a diluted waste stream are below the Federal standards and the apparent compliance is used to justify discharge without treat-

ment. There are two conditions that need to be established in order to make a determination of non-compliance with this prohibition. First, some or all of the Federally-regulated wastewaters must discharge without undergoing BAT model treatment or its equivalent. Second, there must be some form of excess water usage within a Federally-regulated process.

Aluminum Dip Brazing does not meet the first condition since all running rinses discharge without any treatment to remove any of the Federally-regulated pollutants. Aluminum Dip Brazing also does not meet the second condition since the reuse of non-contact single-pass cooling water as make-up for the overflowing rinsing determines the rinsing rates. This means the continuous overflow rinses do not operate on-demand only when there are parts undergoing processing.

3.4 Bypass Provision

The Federal standards in 40 CFR 403.17 prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision explicitly prohibits bypasses that are the result of a short-sighted lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State.

There is no possibility of unauthorized bypassing at Aluminum Dip Brazing since there is no treatment on-site to bypass.

4.0 Compliance with Local Limits and National Prohibitions

All non-domestic wastewater discharges to the sewers must comply with local limits and the national prohibitions. 40 CFR 403.5(a,b,d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

Summary

The local limits apply end-of-pipe and not end-of-process-after-treatment. The local limits do not prohibit dilution. Therefore, the sample record is useable to determine compliance and that Aluminum Dip Brazing has and would be expected to continue to consistently comply with local limits at IWD-1003. Aluminum Dip Brazing would be expected to continue to generate wastewaters containing acids, caustics, hexavalent chromium and complexed cyanide from chromium conversion coating, and copper, nickel, chromium, and zinc from the etching of aluminum and steel alloys. Aluminum Dip Brazing does not provide treatment beyond settling but does provide continuous pH monitoring. ***See*** Appendix 3. Also ***see*** Sections 3.0 and 5.0 of this report.

Requirements

- None.

Recommendations

- None.

4.1 National Objectives

The general pretreatment regulations were promulgated in order to fulfill the national objectives to prevent the introduction of pollutants that:

(1) cause operational interference with sewage treatment or sludge disposal,
(2) pass-through sewage treatment into the receiving waters or sludge,
(3) are in any way incompatible with the sewerage works, or
(4) do not improve the opportunities to recycle municipal wastewaters and sludge.

This inspection did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated by the Burbank wastewater treatment plant through consistent compliance with their sludge and discharge limits.

5.0 Compliance with Federal Monitoring Requirements

Significant industrial users must self-monitor for all regulated parameters at least twice per year unless the sewerage agency monitors in place of self-monitoring. 40 CFR 403.12(e) & 403.12(g).

Each sample must be representative of the sampling day's operations. Sampling must be representative of the conditions occurring during the reporting period. 40 CFR 403.12(g) and 403.12(h).

Summary

The sample record for Aluminum Dip Brazing involves semi-annual self-monitoring and quarterly Burbank monitoring for toxics, salts, and conventional pollutants. All of the monitoring results are representative of the overall discharge of treated and untreated wastewater over the sampling day and over the six-month reporting period. The Federal prohibition against dilution as a substitute for treatment makes it necessary to establish two sampling points, one end-of-process-after-treatment for Federal standards, and the other end-of-pipe for local limits. The monitoring frequency and scope are for the most part appropriate for the discharge from Aluminum Dip Brazing. Aluminum Dip Brazing also appropriately conducts continuous self-monitoring for pH, flow, and salts content (as measured by total dissolved solids). A recommended monitoring schedule that only differs slightly from the permit requirements is included as part of Appendix 2.

Requirements

- Upon the elimination of dilution as a substitute for treatment, the wastewater discharges must be sampled at separate sampling points for Federal standards and for local limits.

Recommendations

- Self-monitoring results for continuous pH and flow should be summarized and reported each month. The pH each day should be summarized by the number of minutes below 2.0, between 2.5 and 5.5, between 5.5 and 9.5, between 9.5 and 12.0, and above 12.5.

Appendix 1
Aluminum Dip Brazing
Schematic of the Wastewater Collection and Treatment