



SOLVE 88

Safety Data Sheet

Date Issued: 03/16/2015

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Solve 88
SYNONYMS: Inorganic metal salt coagulant/flocculants
Recommended Use: Wastewater treatment
Uses Advised Against: No information available
COMPANY: WaterSolve, LLC, 5031 68th Street, Caledonia, Michigan 49316, USA
For Product information call 616-575-8693.
EMERGENCY PHONE: For emergency involving spill, leak, fire, exposure or accident call
CHEMTREC: 1-800-424-9300. Outside the USA and Canada call 703-527-3887.

EMERGENCY OVERVIEW

CORROSIVE LIQUID! CLEAR TO SLIGHTLY HAZY, COLORLESS TO YELLOW LIQUID WITH NO ODOR. MAY CAUSE SKIN AND EYE IRRITATION AND RESPIRATORY IRRITATION. MAY BE HARMFUL IF SWALLOWED. INHALATION OF SPRAY OR MIST MAY IRRITATE RESPIRATORY TRACK.

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status: This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29CFR 1910.1200).

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Physical state	Color	Appearance	Odor
Liquid	Colorless to yellow	Clear	No appreciable odor



DANGER

Hazard statements

Causes severe skin burns and eye damage. May be corrosive to metals.

Precautionary statements- Prevention

Do not breathe dust/fumes/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

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

Keep only in original container



Precautionary Statements-Response

Immediately call a POISON CENTER or doctor/physician

EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

INHALATION: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Inhalation of mist or spray may irritate respiratory tract and may cause burns and difficulty breathing.

SKIN/HAIR CONTACT: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

INGESTION: Rinse mouth. DO NOT induce vomiting, absorb spillage to prevent material damage

Precautionary Statements-Storage

Store locked up in a corrosive resistant container with a resistant inner liner

Precautionary Statements-Disposal

Dispose of contents/container to an approved waste disposal plant

Other information

May be harmful if swallowed

3. **COMPOSITION/INFORMATION ON INGREDIENTS**

INGREDIENTS	CAS #	%WT/WT	TRADE SECRET
Trade Secret Ingredient	PROPRIETARY	100	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. **FIRST AID MEASURES**

Eye Contact: Remove contact lenses. Rinse immediately with plenty of water for at least 20 minutes, holding eyelids apart to ensure flushing of the entire surface. Washing within one minute is essential to achieve maximum effectiveness. Seek medical advice immediately.

Ingestion: DO NOT induce vomiting. If vomiting should occur spontaneously, keep airway clear. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact: Remove contaminated clothing and shoes without delay. Wash immediately with plenty of soap and water for at least 20 minutes. Do not reuse contaminated clothing without laundering. Get medical attention if pain of irritation persists after washing or if signs and symptoms of overexposure appear.

Inhalation: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Most important symptoms and effects, both acute and delayed

Acute effects: Possible eye, skin and respiratory tract irritation or burns.

Chronic effects: May aggravate existing skin, eye, and lung conditions. Persons with kidney disorders have an increased risk from exposure based on general information found on aluminum salts.



Indication of any immediate medical attention and special treatment needed

Notes to physician: Aluminum soluble salts may cause gastroenteritis if ingested. Treatment includes the use of demulcents. Note: Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

5. **FIRE FIGHTING MEASURES**

Extinguishing media

Suitable Extinguishing Media:

Use water fog, carbon dioxide or dry chemical or foam.

Extinguishing media which must not be used for safety reasons.

No information available

Special hazards arising from the substance or mixture

Special Hazards:

May produce hazardous fumes or hazardous decomposition products.

Advice for firefighters

Fire Fighting Measures:

Product is a water solution and nonflammable. In a fire, this product may build up pressure and rupture a sealed container; cool exposed containers with water spray. Use self-contained breathing apparatus in confined areas; avoid breathing vapors, mist, spray or dust.

Special protective equipment for fire-fighters:

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Explosion data

Sensitivity to Mechanical impact

None

Sensitivity to static discharge

None

6. **ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Personal precautions

Wear adequate personal protective clothing and equipment. Approved breathing apparatus may be necessary.

Environmental precautions

Environmental Precautions

Do not allow liquid to enter streams and waterways.

Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Build dikes as necessary to contain flow of large spills.



Methods for cleaning up

Clear spills immediately. For small spills, use soda ash to neutralize, an inert material to absorb. Place contaminated materials into containers and store in a safe place to await proper disposal. Caution: Use a soda ash may generate carbon dioxide gas. Provide adequate ventilation to spill area.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Keep away from heat and open flame. Avoid contact with eyes, skin and clothing. Wear chemical splash goggles, gloves, and protective clothing when handling. Wash thoroughly after handling. Avoid breathing vapor or mist. Use with adequate ventilation and employ respiratory protection where mist or spray may be generated. FOR INDUSTRIAL USE ONLY.

Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Do not store in unlined metal containers. Product may slowly corrode iron, brass, copper, aluminum, mild steel, and stainless steel. Keep container closed when not in use. Store in a cool, dry place away from direct heat.

Incompatible products

Alkalis.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls:

Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details. If there are no applicable or established limit requirements or guidelines, general ventilation should be sufficient.

Individual protection measures, such as personal protective equipment

Eye/Face Protection:

Wear eye/face protection such as chemical splash proof goggles and face shield (when eye and face contact is possible due to splashing or spraying of material). Eyewash equipment and safety shower should be provided in areas of potential exposure.

Hand Protection:

Appropriate chemical resistant gloves should be worn.

Skin / body Protection:

Avoid skin contact. Wear impermeable gloves and suitable protective clothing and protective shoes.

Respiratory Protection:

If exposures exceed the PEL or TLV, use NOISH/MSHA approved respirator in accordance with OSHA Respiratory Protection Requirements under 29 CFR 1910.134. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

Other personal protection data

Eyewash fountains and safety showers must be easily accessible.

Hygiene measures

Take off contaminated clothing and wash before reuse.



Additional Advice :

Food, beverages and tobacco products should not be carried, stored or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water. Safety shower and eye wash located in immediate area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state: liquid
Color: colorless to yellow
Appearance and Odor: Clear
Odor threshold: No information available
Odor: No appreciable odor

<u>Property</u>	<u>Values</u>	<u>Remarks/Method</u>
pH:	1.5 – 2.5	as is
Melting Point and Freezing:	-12°C / 10 °F	No information available
Boiling Point/Boiling range:	104°C / 220 °F	No information available
Flash point:	Not applicable	No information available
Evaporation Rate:	No information available	No information available
Flammability (solid, gas):	No information available	No information available
Flammability Limit In Air		
Upper limit:	Not applicable	No information available
Lower limit:	Not applicable	No information available
Vapor Pressure:	No information available	No information available
Vapor Density:	No information available	No information available
Specific gravity:	1.311 – 1.331	No information available
Solubility in Water:	Soluble below pH 4	No information available
Solubility in other solvents:	No information available	No information available
Partition coefficient: N-octanol/water:	No information available	No information available
Autoignition temperature:	Not applicable	No information available
Decomposition temperature:	No information available	No information available
Kinematic viscosity:	No information available	No information available
Dynamic viscosity:	5 - 15 cps @ 25°C	No information available

Other information

Density:	10.94 – 11.10 lb/gal
Bulk Density:	No information available
Explosive properties:	No information available
Oxidizing properties:	No information available
Softening point:	No information available
Molecular weight:	No information available
Volatile organic compounds (VOCs) content:	No information available
% Volatile (By Wt):	45 - 65%

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable



Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

No.

Conditions to avoid

None.

Incompatible materials

Materials to avoid

Alkalis

Hazardous decomposition products

Hazardous decomposition products

Thermal decomposition may release toxic and /or hazardous gases such as aluminum, Cl₂, and HCl.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure: Skin, eyes, ingestion and respiratory

INHALATION: Inhalation of mist or spray may irritate respiratory tract and may cause burns and difficulty breathing.

SKIN CONTACT: Prolonged and/or repeated contact will cause severe skin irritation and burns.

EYE CONTACT: Based on pH, this product is expected to cause severe eye irritation, possibly resulting in burns and eye damage. Prolonged exposure to Aluminum salts may cause conjunctivitis.

INGESTION: May be harmful if swallowed. May cause burns of the mouth, throat and stomach. Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

Acute Toxicity:

Acute Oral LD50 (mg/kg): No information available

Acute Dermal LD50 (mg/kg): No information available

Acute Inhalation LD50 (mg/kg): No information available

Acute toxicity- Component information

Component/Case #	Weight %	LD50 Oral	LD50 Dermal	LC50 Inhalation
Trade Secret ingredients	45 – 55%	>2000 mg/kg (Rat)		

Information on toxicological effects

Symptoms

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation

Causes burns

Serious eye damage/eye irritation

Risk of serious damage to eyes

Sensitization

No information available

Germ cell mutagenicity

No information available



Carcinogenicity

This product does not contain any components in concentrations greater than or equal to 0.1% that are listed as known or suspected carcinogens by NTP, IARC, ACGIH, OR OSHA.

Reproductive toxicity

No information available

Specific target organ toxicity- Single exposure

No information available

Specific target organ toxicity-repeated exposure

No information available

Aspiration hazard

No information available

Numerical measures of toxicity—Product information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 4004 mg/kg

Other information

Conclusions are drawn from sources other than direct testing.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute aquatic Toxicity – Product information

Fish:

LD (24 HR. STATIC, Fresh water) 10 mg/L *Oncorhynchus Kisutch*, Coho salmon, Silver Salmon¹

LD (24 HR. STATIC, Fresh water) 10 mg/L *Oncorhynchus Tshawytscha*, Chinook salmon¹

LD (24 HR. STATIC, Fresh water) 10 mg/L *Ptycvocheilus Oregonensis*, Northern squawfish¹

Crustacea LC50 (48 hr. Static) 33.2 mg/L *Ceriodaphnia dubia*²

Algae/aquatic plants: Not determined

Mobility: No information available.

Persistence and degradability: No information available.

Bioaccumulative potential: No information available.

Results of PBT and vPvB assessment: No information available

Other adverse effects

¹Data from USEPA ECOTOX database search, reference: Lethal Effects of 1888 Chemical upon Four Species of Fish From Western North America, Macphee, C. and R. Ruelle, Univ. of Idaho Forest, Wildlife Range Experimental Station Bull. No. 3, Moscow, ID, 112p.

²Generated from tests conducted by SEAUS Testing Laboratories Nov. 1993 using EPA/600- 4-90/027

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, State and local regulations.

Contaminated packaging

Since empty containers retain product residue, follow label warnings even after container is emptied.



14. TRANSPORT INFORMATION

DOT Status: REGULATED MATERIAL
Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)
UN/NA Number: UN3264
Hazard class: 8
DOT Packing Group: III
ERG#: 154

ICAO/IATA

Status: REGULATED MATERIAL
Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)
UN/NA Number: UN3264
IATA-DGR Class: 8
Packing Group: III
ERG Code: 8L

IMDG:

Status: REGULATED MATERIAL
Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)
UN/NA Number: UN3264
IATA-DGR Class: 8
Packing Group: III
EmS Schedules: F-A, S-B

Harmonized Tariff Number: 2827.32

15. REGULATORY INFORMATION

International Inventories:

TSCA (United States): All ingredients are on the inventory or exempt from listing.

Australia (AICS): All ingredients are on the inventory or exempt from listing.

Canada DSL: All ingredients are on the inventory or exempt from listing.

Canada NDSL: All ingredients are on the inventory or exempt from listing.

China (IECSC): All ingredients are on the inventory or exempt from listing.

EINECS (European Inventory of Existing Chemical Substances): All ingredients are on the inventory or exempt from listing.

ELINCS (European List of Notified Chemical Substances): All ingredients are on the inventory or exempt from listing.

Japan (ENCS): All ingredients are on the inventory or exempt from listing.

South Korea(KECL) : All ingredients are on the inventory or exempt from listing.

Philippines (PICCS): All ingredients are on the inventory or exempt from listing.

Legend

TSCA- United States Toxic Substances Control Act Section 8(b) Inventory

AICS- Australian Inventory of Chemical Substances

DSL/NDSL- Canadian Domestic Substances List/Non-Domestic Substances List

IECSE- China Inventory of Existing Chemical Substances

EINECS/ELINCS- European Inventory of Existing Commercial Chemical Substances



EU-List of Notified Chemical Substances
ENCS-Japan Existing and New Chemical Substances
KECL-Korean Existing and Evaluated Chemical Substances
PICCS-Philippines Inventory of Chemical and Chemical Substances

U.S. Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirement at the local, regional, or state level pertaining to releases of this material.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40CFR 122.21 and 40 CFR 122.42).

SARA Section 311/312 Hazard Class:

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

SARA 313

Section 313 of Title III of Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of Act and Title 40 of the Code of Federal Regulations, Part 372.

U. S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Polyaluminum Chloride 1327-41-9

Pennsylvania Right To Know List	Present
Minnesota Hazardous Substance List	Present

16. OTHER INFORMATION

NFPA Rating: Health-2 Flammability-0 Instability-0 Special hazard-COR
HMIS Rating: Health-2 Flammability-0 Physical hazard-0 Personal protection-x

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Revision number: 1

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. Recipients are advised to confirm in advance of need that the



information is current, applicable, and suitable to their circumstances. This information is for the specific material described only and may not be valid if the material is used in combination with any other materials or in any process. The user is responsible to determine the completeness of the information and suitability for the user's own particular use. The knowledge and belief of the company, the information is accurate and reliable as of the date indicated but the company makes no express or implied warranty of merchantability for the material or the information. The company makes no express or implied warranty of fitness for a purpose for the material or for the information. Users of any chemical should educate themselves on all aspects of its use by independent investigation of current scientific and medical knowledge that the material can be used safely.

List of abbreviations and acronyms that could be, but not necessarily are, used in the safety data sheet:

ACGIH: American Conference of Industrial Hygienists
BEI: Biological Exposure Index
CAS Chemical: Abstracts Service (Division of the American Chemical Society)
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
CMR: Carcinogenic, Mutagenic or Toxic for Reproduction
DOT: Department of Transportation
FG: Food grade
FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
H-statement: Hazard Statement
HMIRC: Hazardous Materials Information Review Commission
HMIS: Hazardous Materials Identification System
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI (ICAO): Technical Instructions by the "International Civil Aviation Organization"
IMDG: International Maritime Code for Dangerous Goods
ISO: International Organization for Standardization
logPow: octanol-water partition coefficient
LC_{xx}: Lethal Concentration, for xx percent of test population
LD_{xx}: Lethal Dose, for xx percent of test population
IC_{xx}: Inhibitory Concentration for xx of a substance
EC_{xx}: Effective Concentration of xx
N.O.S.: Not otherwise Specified
NFPA: National Fire Protection Association
NIOSH: National Institute for Occupational Safety and Health
OECD: Organization for Economic Co-operation and Development
OEL: Occupational Exposure Limit
OSHA: Occupational Safety and Health Administration
P-Statement: Precautionary Statement
PBT: Persistent, Bioaccumulative and Toxic
PMRA: Health Canada Pest Management Regulatory Agency
PPE: Personal Protective Equipment
RTK: Right to Know
STEL: Short-term exposure limit
SDS Safety Data Sheet
STOT: Specific Target Organ Toxicity
TLV: Threshold Limit Value
TWA: Time-weighted average
vPvB: Very Persistent and Very Bioaccumulative
WEL: Workplace Exposure Level
WHMIS: Workplace Hazardous Materials Information System