APPENDIX 1

ACETIC ACID (99% purity) PRICING, QUANTITIES & SPECIFICATIONS

ACETIC ACID	**ICSC:** 0363 Peer-Review Status: 06.05.2010 Validated
Glacial acetic acid Ethanoic acid Ethylic acid Methanecarboxylic acid	
CAS #: 64-19-7 RTECS #: AF1225000 UN #: 2789 EC #: 607-002-00-6 EINECS #: 200-580-7	Formula: $C_2H_4O_2$ / CH_3COOH Molecular mass: 60.1

TYPES OF HAZARD / EXPOSURE	ACUTE HAZARDS / SYMPTOMS	PREVENTION	FIRST AID / FIRE-FIGHTING
FIRE	Flammable.	NO open flames, NO sparks and NO smoking.	Use powder, alcohol-resistant foam, water spray, carbon dioxide.
EXPLOSION	Above 39°C explosive vapor/air mixtures may be formed. Risk of fire and explosion on contact with strong oxidants.	Above 39°C use a closed system, ventilation and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.
EXPOSURE		**AVOID ALL CONTACT!**	
Inhalation	Sore throat. Cough. Burning sensation. Headache. Dizziness. Shortness of breath. Labored breathing.	Use ventilation, local exhaust or breathing protection.	Fresh air, rest. Half-upright position. Refer immediately for medical attention.
Skin	Pain. Redness. Skin burns. Blisters.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse and then wash skin with water and soap. Rinse skin with plenty of water or shower for at least 15 minutes. Refer immediately for medical attention.

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Eyes	Redness. Pain. Severe burns. Loss of vision.	Wear face shield or eye protection in combination with breathing protection.	Rinse with plenty of water (remove contact lenses if easily possible). Refer immediately for medical attention.
Ingestion	Sore throat. Burning sensation. Abdominal pain. Vomiting. Shock or collapse.	Do not eat, drink, or smoke during work.	Rinse mouth. Do NOT induce vomiting. If within a few minutes after ingestion, one small glass of water may be given to drink. Refer immediately for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Remove all ignition sources. Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking liquid in sealable containers. Cautiously neutralize spilled liquid with sodium carbonate only under the responsibility of an expert.	Do not transport with food and feedstuffs. **EC Classification** Symbol: C; R: 10-35; S: (1/2)-23-26-45; Note: B **UN Classification** UN Hazard Class: 8; UN Subsidiary Risks: 3; UN Pack Group: II **GHS Classification** Signal: Danger Flammable liquid and vapor Harmful if inhaled (vapor) Harmful in contact with skin May be harmful if swallowed Causes severe skin burns and eye damage May cause respiratory irritation Causes damage to the respiratory tract through prolonged or repeated exposure if inhaled Harmful to aquatic life

EMERGENCY RESPONSE	SAFE STORAGE
NFPA Code: H3; F2; R0.	Fireproof. Separated from food and feedstuffs, strong oxidants, strong acids and strong bases. Store only in original container. Well closed. Keep in a well-ventilated room. Store in an area without drain or sewer access.

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IMPORTANT DATA	
Physical State; Appearance COLOURLESS LIQUID WITH PUNGENT ODOUR. **Physical dangers** No data. **Chemical dangers** The substance is a weak acid. Reacts violently with strong oxidants. This generates fire and explosion hazard. Reacts violently with strong bases, strong acids and many other compounds. Attacks some forms of plastic, rubber and coatings. **Occupational exposure limits** TLV: 10 ppm as TWA; 15 ppm as STEL; (ACGIH 2010). MAK (respirable fraction): 10 ppm, 25 mg/m³; Peak limitation category: I(2); Pregnancy risk group: C; (DFG 2010). EU OEL (selected): 10ppm, 25mg/m³ as TWA;.	**Routes of exposure** Serious local effects by all routes of exposure. **Inhalation risk** A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C. **Effects of short-term exposure** The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion. Inhalation may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. **Effects of long-term or repeated exposure** Repeated or prolonged contact with skin may cause dermatitis. Lungs may be affected by repeated or prolongated exposure to an aerosol of this substance. Risk of tooth erosion upon repeated or prolongated exposure to an aerosol of this substance.

PHYSICAL PROPERTIES	ENVIRONMENTAL DATA
Boiling point: 118°C Melting point: 16.7°C Relative density (water = 1): 1.05 Solubility in water: miscible Vapour pressure, kPa at 20°C: 1.5 Relative vapour density (air = 1): 2.1 Relative density of the vapour/air-mixture at 20°C (air = 1): 1.02 Flash point: 39°C c.c. Auto-ignition temperature: 485°C Explosive limits, vol% in air: 6.0-17 Octanol/water partition coefficient as log Pow: -0.17	The substance is harmful to aquatic organisms.

NOTES
UN number 2789 is for acetic acid, glacial or acetic acid solution, more than 80% acid by mass. Other UN numbers: UN 2790 acetic acid solution (10-80% acetic acid); UN hazard class 8, packing group II-III.

ADDITIONAL INFORMATION

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IPCS
International
Programme on
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