Response Management Associates, Inc.

Emergency Response Planning, Training & Management
Environmental / Regulatory Compliance & Engineering

FILE COPY

April 25, 2000

Mr. John Steib
Director, NSR Program
TNRCC, Office of Air Quality
12100 Park 35 Circle
Austin, Texas 78753

Notification of Use of Chapter 106 Subpart D 106.261 for Storage of Sodium Sulfide Solution in Tank 80-2 at the Deer Park Terminal, Intercontinental Terminals Company, HG-0304-N

Dear Mr. Steib,

Intercontinental Terminals Company in Deer Park, Harris County, is submitting this Notification of use of Permit by Rule 261 for the change of service for the storage of Sodium Sulfide Solution in and existing storage tank 80-2.

The documents attached verify compliance with all paragraphs of the permit by rule.

For any technical questions please call me at 281-453-0117

Sincerely,

Ralph Chaiet

Ralph Chaiet P.E.

Attachments

Cc: Dr. Melvin Mouton, Intercontinental Terminals Company, Deer Park, TX
Mr. Rob Barrett, Director, HCPCD, Pasadena, TX
Mr. Richard Flannery, Acting Air Programs Manager, TNRCC Region 12, Houston, TX

2138C001.doc

e-mail: RMA@rmaworld.com
16000 Stuebner Airline Road, Suite 520 • Spring (Houston), Texas 77379
Office. 281. 251. 9200 • Metro. 281. 320. 9796 • Fax. 281. 320. 9700

Standard Exemption §106.261
CHANGE OF SERVICE TO STORE
SODIUM SULFIDE IN AN 80 M BBL TANK
Tank 80-2

AT

INTERCONTINENTAL TERMINALS COMPANY

DEER PARK , TEXAS

HG-0403N

PREPARED BY

PHOENIX ENGINEERING INC.
an affiliate of RMA

8866 Gulf Freeway, Suite 500
Houston, Texas 77017

Phone: 713.944.7208
Fax: 713.944.1618

STATE OF TEXAS
RALPH G. CHAIET
75161
LICENSED
PROFESSIONAL ENGINEER

4/25

JOB
2138

REVISION: 0
DATE: APRIL 24 , 2000
ISSUED FOR: SUBMISSION TO TNRCC

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SE §106.261 CHECKLIST

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INTRODUCTION

Intercontinental Terminals Company operates a bulk liquid storage terminal on the Houston Ship Channel in Deer Park, Harris County, under permit # 1078.

At this time ITC wishes to store a solution of Sodium Sulfide (12 wt %) in water, in an existing storage tank 80-2, a 80 M bbl cone roof tank with an internal floating roof. The product will be stored at ambient conditions. The tank emissions of the Sodium Sulfide is less than 1 lb per hour therefore qualify under §106.261

The product will be received by either railcar or truck and will be shipped outbound to marine vessel. There are no emissions associated with the unloading process. The loading emissions have been calculated and qualify under §106.261, as they are less than 1 per hour.

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

EXEMPTION§106.261
REGISTRATION FORM PI-7-261

For instructions on using this exemption alone or in conjunction with another exemption, see the back of this form.

Please mail to: TNRCC, Office of Air Quality, New Source Review Permits Division (MC-162), PO Box 13087, Austin, TX 78711-3087

Send copies to: TNRCC Regional Office X Done
Local Program(s)(if applicable) X Done

I. Company Name INTERCONTINENTAL TERMINALS COMPANY (Corporation, Company, Government Agency, Firm, etc.) Attn: Dr. Melvin L Mouton (Company Representative)
Mailing Address 1943 BATTLEGROUND ROAD DEER PARK TX 77536

Technical Contact RALPH G. CHAIET P.E. (Consultant, Owner, Operator, etc.) Title PROJECT MANAGER
Contact's Address 16000 STUEBNER AIRLINE SUITE 520 SPRING (HOUSTON) TX 77379 Telephone (281) 453-0117
Fax (281) 320-9700

II. PHYSICAL LOCATION OF EXEMPT FACILITY

Name of Plant or Site DEER PARK TERMINAL Operating Unit Name (if applicable): _____

Physical Address SAME AS ABOVE
(A physical address or accurate driving directions must be provided on all registrations.)

Nearest City DEER PARK Zip Code 77536 County HARRIS

TNRCC Account Number: HG -0403 - N or, if not assigned, give: Latitude ___ ° ___ ' ___ " Longitude ___ ° ___ ' ___ "

SITE REQUIREMENTS:
A. Submit a plot plan to scale of the property locating and identifying emission points, the facility, plant boundaries, and plant equipment.
B. Furnish an area map to scale showing the facility and surrounding area, including nearest receptor (§106.261 (2)).
C. A&B need not be duplicated if the information has previously been submitted in Permit No. 1078 or Exemption Registration No. _____. (If authorizing a new facility, more information concerning the location of emission points may be submitted in IV. D. below).

III. TYPE OF FACILITY:
A. Previous authorization (Special Exemption, Exemption Registration, or Permit) Number 1078
B. Operating Schedule: Hours/day 24 Days/week 7 Weeks/year 52
C. Permanent [X] Temporary [ ]
D. Start of Construction N/A (Date) Start of Operation N/A (Date) End of Operation _____ (Date)

IV. PROCESS INFORMATION
This Exemption is being used to:
A. [X] Change chemical service from _____ to SODIUM SULFIDE SOLUTION
B. [ ] Add chemical(s): _____
C. [ ] Add process fugitive components
D. [ ] Other uses (including add new unit or equipment): Attach brief, written descriptions of the process and location of new emission points (if not submitted in II. A. and B. above).

V. EMISSIONS DATA Attach emission calculations.

Emission Point Number (from Plot Plan)	Emission Point Name (Ex: Thermal Oxidizer, solvent distillate unit, Fugitive area 1, cyclone)	Name of Air Contaminant (Ex: acetylene, sulfur dioxide, limestone)	CAS Number	Distance to nearest receptor (§106.261 (2)) (ft)	Vent type (stack or fugitive)	Emission Rate of Each Air Contaminant	
						lb/hr	tons/year
ST80-2	TANK 80-2	SODIUM SULFIDE	1313-82-2	700	STACK	0.08	0.005
BGDK1-10	BARGE AND SHIP LOADING	SODIUM SULFIDE	1313-82-2	1000	STACK	0.15	0.007

VI. I, MELVIN L MOUTON (Name) VICE PRES. ENVIRONMENTAL AND REG COMPLIANCE (Title),
state that I have knowledge that the facts represented and submitted in this claim are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project will satisfy the conditions and limitations of exemption §106.261.

DATE 4-25-00 SIGNATURE Melvin L. Mouton

Rev. 1-20-99

Company Name: INTERCONTINENTAL TERMINALS CO. Checklist completed by: CHAIET Date: 04/24/00
Facility Type: BULK LIQUID STORAGE TERMINAL Exemption(s) claimed: §106. 261
Project Description: STORAGE OF SODIUM SULFIDE SOLUTION IN TK 80-2
(including equipment, materials, and brief process description)

List the maximum annual emission rates, in **TONS PER YEAR (TPY)**, for this project:

CO : _____	NO_x: _____	PM : _____
SO_2: _____	VOCs: 0.015	Other: _____ _____

The following questions require a "Yes" or "No" answer to be indicated for this exemption claim:

A. §106.4(a)(5): Current Exemption Requirements

Yes_X__ No__ Have you checked to determine if this exempt project is being claimed under the current version of 30 TAC 106?
If "Yes", continue to next question
If "No", please contact the TNRCC NSRP Division for a copy of the current exemption to be claimed.

B. §106.4(a)(7): Exemption prohibition check

Yes___ No_X Are there any air permits under the same account containing permit conditions which prohibit or restrict the use of standard exemptions?
If "No", continue to next question
If "Yes", exemptions may not be used or their use must meet the restrictions of the permit.
A new permit or permit amendment may be required. ***List permit number(s):___***

C. §106.4(b): Circumvention check

§106.4(b) states "No person shall circumvent by artificial limitations the requirements of §116.110 of this title (covering permitting)." Circumvention by artificial limitations may include but is not limited to:

1. *dividing a complete project into separate segments to circumvent §106.4(a)(1) limits;*
2. *claiming feed or production rates below the physical capacity of the project's equipment in order to begin constructing facilities before a permit or permit amendment is approved for full scale operations, particularly when the unit will not be economically viable at less than permitted capacity;*
3. *claiming a limited chemical list in order to begin constructing facilities before a permit or permit amendment is approved for additional chemicals, particularly when the unit will not be economically viable until the additional chemicals are authorized.*

Yes___ No_X_ Does your project meet any of the criteria listed above?
If "No", continue to next rule question
If "Yes", an exemption may not be claimed

D. §106.4(c) - (d): Compliance with all Rules

Yes_X_ No___ Will the facility comply with all rules and regulations of the TNRCC, the intent of the Texas Clean Air Act, and any local permitting or registration requirements?
If "Yes", continue to next rule question
If "No", an exemption may not be claimed.

E. §106.4(a)(1): Emission limits check

Yes___ No_X__ The maximum emissions from all facilities at the site, including this exemption claim, are less than 25 tpy of any contaminant.
If the answer to this questions is "Yes", no further review is needed to complete this checklist.
Forward all information needed to verify your exemption claim to the TNRCC.
If "No", please continue through the remaining applicable pages of the checklist.

Detailed §106.4 Requirements

F. §106.4(a)(1): Emission limits check continued....

1. Yes_X__ No___ Are SO_x, PM, VOC, and other emissions shown above each less than 25 TPY?
2. Yes_X__ No___ Are the NO_x and CO emissions shown above each less than 250 TPY?
   If the answer to either question is "No", an exemption cannot be claimed.
   If the answer to both questions is "Yes", continue to next rule question

G. §106.4(a)(4): Site exemption emissions *(For all exemptions at the property and/or under the same Account ID No.)*

1. Yes_X__ No___ Are total NO_x and CO emissions each less than 250 TPY?
2. Yes___ No_X__ Are total emissions of all other contaminants each less than 25 TPY?
   If the answer to both questions is "Yes", continue to next rule question
   If either question is answered "No" please answer the following:

3. Yes_X__ No___ Has any facility at the property had public notification and comment as required in 30 TAC 116 (or applicable procedures of Chapter 116 in effect at the time)?
   If "Yes", please describe the associated permit action and when notice occurred: PERMIT RENEWAL 1994
   If "No", an exemption may not be claimed.

H. §106.4(a)(6): Federal Requirements for NSPS & NESHAPs

1. Yes_X__ No___ Are any EPA New Source Performance Standards (NSPS) applicable to the facilities for which the exemption is being claimed?

2. Yes___ No_X__ Are any EPA National Emissions Standards for Hazardous Air Pollutants (NESHAPs) applicable to the facilities for which the exemption is being claimed?
   If "No", continue to next rule question
   *If "Yes", **Please list the applicable SubPart(s):*** _____
   Please attach a discussion of how the facilities will meet applicable standards.

I. §106.4(a)(2): Nonattainment checklists

1. Yes_X__ No___ The facility to be exempted is located in a nonattainment county? (See list pages 1 & 2)
   If "Yes", complete applicable pages of this checklist, then answer the next question
   If "No", continue to the PSD questions below
2. Yes___ No_X__ For any regulated nonattainment contaminant, has this project triggered a nonattainment review?
   If "No",continue to the PSD questions below
   *If "Yes", the project is a major source or a major modification **and an exemption may not be used.***
   A Nonattainment Permit review must be completed to authorize the project.

J. §106.4(a)(3): Prevention of Significant Deterioration (PSD) checklist

Yes___ No_X__ For any regulated National Ambient Air Quality Standard (NAAQS) contaminant, has this project triggered a PSD review? *(Please complete the last page of this checklist, then answer:)*
If "No",no further review is needed to complete the checklist for Chapter 106. Forward all information needed to verify your exemption claim to the TNRCC.
*If "Yes", the project is a major source **and an exemption may not be used.** A PSD Permit review must be completed to authorize the project.*

Houston/Galveston Nonattainment Applicability Checklist

If the facility to be exempted is located in Brazoria, Chambers, Ft. Bend, Galveston, Harris, Liberty, Montgomery or Waller County and has the potential for VOC or NO_x emissions, please complete the following

For this project only:

		VOC	NO_x
New allowable rate	+	0.015	
Old actual rate**	-		
Project Increase	=	0.015	

The following questions require a "Yes" or "No" answer to be indicated for this exemption claim:

K. VOCs

1. Yes_X__ No___ The facility to be exempted has the potential for VOC emissions.
   If "No", continue to the NO_x questions (Section L) below
   If "Yes", please answer the following
2. Yes_X__ No___ Are site-wide VOC emissions from all sources * greater than 25 TPY? (i.e. Is this site an existing major source?)
   If "No", continue to the NO_x questions below
   If "Yes", please complete the following :
3. Yes___ No_X__ Is the project increase of VOCs greater than 5 TPY? (i.e. Does this action trigger netting?)
   If If "No", continue to the NO_x questions below
   If "Yes", please provide contemporaneous netting calculations (attach) and answer the following question
4. Yes___ No_X__ Is the contemporaneous net increase of VOCs greater than 25 TPY? (i.e. Is this project a major modification?)*If "No", continue to the NO_x questions below*
   If "Yes", this project will be a major modification and ***an exemption may not be used.*** *A Nonattainment permit review must be completed.*

L. NO_x

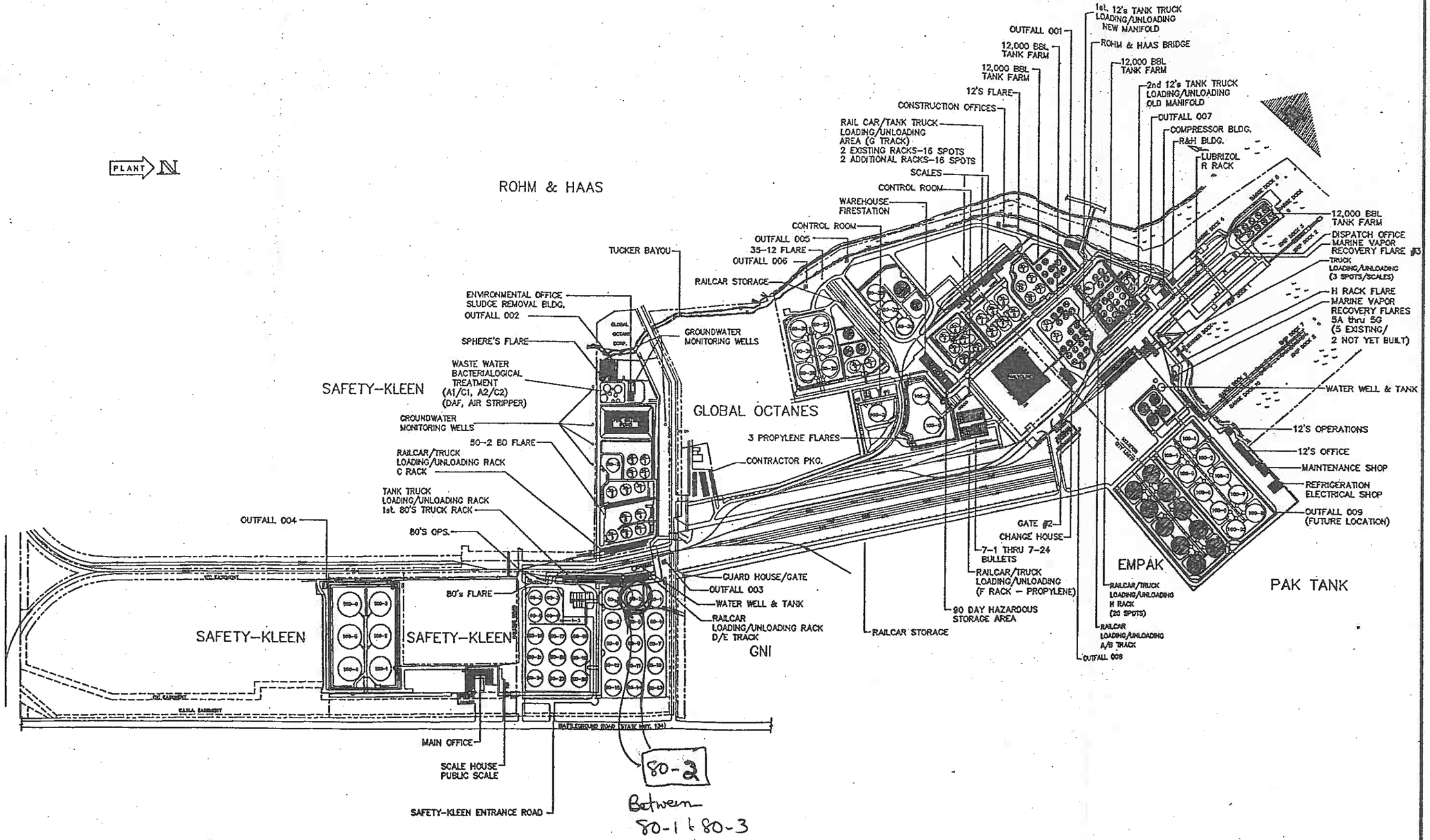
1. Yes___ No_X__ The facility to be exempted has the potential for NO_x emissions.
   If "No", continue to the PSD questions
   If "Yes", please answer the following

2. Yes___ No_X__ Are site-wide NO_x emissions from all sources * greater than 25 TPY? (i.e. Is this site an existing major source?)
   If "No", continue to question 3
   If "Yes", please complete the following :
   A. Yes___ No___Is the project increase of NO_x greater than 5 TPY? (i.e. Does this action trigger netting?)
   If "No", continue to the PSD questions
   If "Yes", please provide contemporaneous netting calculations (attach) and answer the following question
   B. Yes___ No___Is the contemporaneous net increase of NO_x greater than 25 TPY? (i.e. Is this project a major modification?)
   If "No", continue to the PSD questions
   If "Yes", this project will be a major modification and ***an exemption may not be used.*** *A Nonattainment permit review must be completed.*

3. Yes___ No_X__ For new or existing minor sources, are project increases greater than 25 TPY?
   If "No", continue to the PSD questions
   If "Yes", this project will be major in itself and ***an exemption may not be used.*** *A Nonattainment permit review must be completed.*

* *"all sources" and "site-wide" should include facilities which are permitted, exempted, or grandfathered,* ***excluding this project***

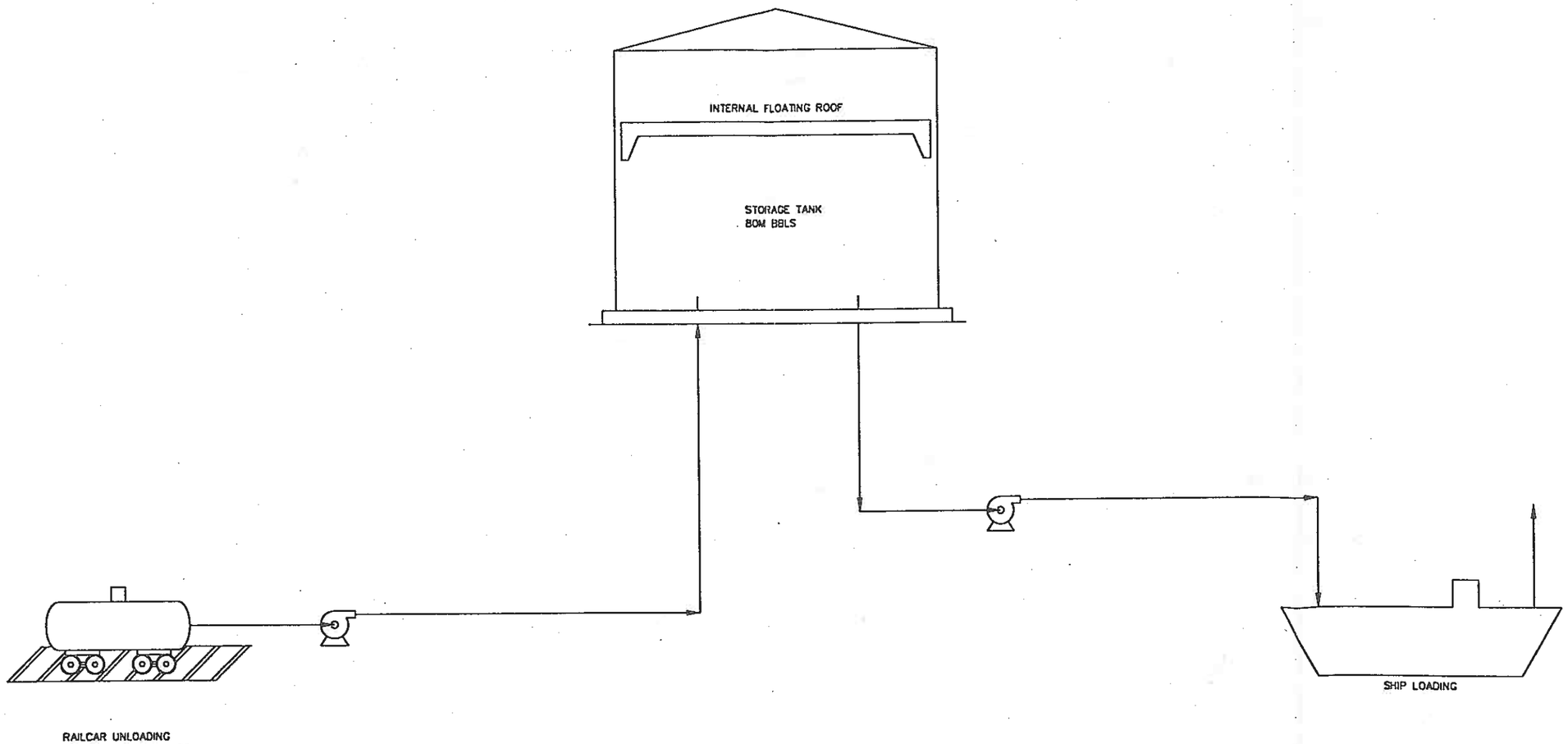
** *Actual emission rates are based on the average emissions from all existing facilities affected by this exemption claim (project) for the previous 2 years*


PLANT
N
ROHM & HAAS
SAFETY-KLEEN
GLOBAL OCTANES
EMPAK
PAK TANK
GNI
SAFETY-KLEEN
SAFETY-KLEEN
TUCKER BAYOU
ENVIRONMENTAL OFFICE
SLUDGE REMOVAL BLDG.
OUTFALL 002
SPHERE'S FLARE
WASTE WATER
BACTERIALOGICAL
TREATMENT
(A1/C1, A2/C2)
(DAF, AIR STRIPPER)
GROUNDWATER
MONITORING WELLS
50-2 BO FLARE
RAILCAR/TRUCK
LOADING/UNLOADING RACK
C RACK
TANK TRUCK
LOADING/UNLOADING RACK
1st. 80'S TRUCK RACK
80'S OPS.
OUTFALL 004
80's FLARE
MAIN OFFICE
SCALE HOUSE
PUBLIC SCALE
SAFETY-KLEEN ENTRANCE ROAD
GROUNDWATER
MONITORING WELLS
RAILCAR STORAGE
OUTFALL 006
OUTFALL 005
35-12 FLARE
CONTROL ROOM
WAREHOUSE
FIRESTATION
CONTROL ROOM
SCALES
RAIL CAR/TANK TRUCK
LOADING/UNLOADING
AREA (G TRACK)
2 EXISTING RACKS-16 SPOTS
2 ADDITIONAL RACKS-16 SPOTS
CONSTRUCTION OFFICES
12'S FLARE
12,000 BBL
TANK FARM
12,000 BBL
TANK FARM
OUTFALL 001
1st. 12's TANK TRUCK
LOADING/UNLOADING
NEW MANIFOLD
ROHM & HAAS BRIDGE
12,000 BBL
TANK FARM
2nd 12's TANK TRUCK
LOADING/UNLOADING
OLD MANIFOLD
OUTFALL 007
COMPRESSOR BLDG.
R&H BLDG.
LUBRIZOL
R RACK
12,000 BBL
TANK FARM
DISPATCH OFFICE
MARINE VAPOR
RECOVERY FLARE #3
TRUCK
LOADING/UNLOADING
(3 SPOTS/SCALES)
H RACK FLARE
MARINE VAPOR
RECOVERY FLARES
5A thru 5G
(5 EXISTING/
2 NOT YET BUILT)
WATER WELL & TANK
12'S OPERATIONS
12'S OFFICE
MAINTENANCE SHOP
REFRIGERATION
ELECTRICAL SHOP
OUTFALL 009
(FUTURE LOCATION)
3 PROPYLENE FLARES
CONTRACTOR PKG.
GATE #2
CHANGE HOUSE
7-1 THRU 7-24
BULLETS
RAILCAR/TRUCK
LOADING/UNLOADING
(F RACK - PROPYLENE)
90 DAY HAZARDOUS
STORAGE AREA
RAILCAR STORAGE
RAILCAR/TRUCK
LOADING/UNLOADING
H RACK
(20 SPOTS)
RAILCAR
LOADING/UNLOADING
A/B TRACK
OUTFALL 008
GUARD HOUSE/GATE
OUTFALL 003
WATER WELL & TANK
RAILCAR
LOADING/UNLOADING RACK
D/E TRACK
80-2
Between
80-1 & 80-3
Intercontinental Terminals Company
DWG. NAME:
PLOT PLAN
DRAWN BY: SK
DWG. NO.:
DATE: 1/11/2000
REV. NO.:
SHEET 1 OF 1
SCALE: 1" = 300'
TANKS NOT YET BUILT

IV. PROCESS DESCRIPTION

A solution of Sodium Sulfide (12% in water) will be received by either Rail Cars or Tank Trucks. The material will be pumped into an existing tank, TK80-2 which is an 80M bbl cone roof storage tank

As requested, product will be loaded to marine vessels. Vapor control will not be required during loading of this product.



NO	REVISION	BY	DATE
A	ISSUED FOR APPROVAL	AM	1/31/00

DRAWN	RCC	1/28/00
CHECKED	AM	1/31/00
ENGINEER	RCC	1/31/00
APPROVAL		
APPROVAL		
APPROVAL		
PROJECT ENG		
DISPLAY ENG		

DO NOT SCALE PRINTS
Contents and Dimensions Shown On Drawings are Supplied to the Contract for Its Contract Use and Purposes as Authorized.

PHOENIX ENGINEERING INC.
an affiliate of RMI

[illegible] Gulf Freeway
Suite 500
Houston, Texas 77017
Phone: (713) 944-7205
Fax: (713) 944-1616

SIMPLIFED FLOW DIAGRAM
ST. EX. FOR STORAGE AND LOADING
OF SODIUM SULFIDE SOLUTION

DWG. NO. 2046/001/RA
SCALE NONE
SHEET 1 OF 1

V. TANK EMISSIONS AND LOADING EMISSIONS CALCULATIONS

STORAGE TANK 80-2 WITHDRAWAL AND STANDING EMISSIONS

The facility anticipates 6 turnovers for an annual throughput 80,000 bbl x 6 = 480,000 bbls/yr. The marine loading rate (same as withdrawal rate in this case) is 5000 bbl/hr.

The tank withdrawal losses from AP-42 is

Withdrawal Loss lbs. = (0.943 x Q x C x W)/D

0.943 = Constant
Q = 5000 bbls/hr withdrawal rate
C = 0.0015 from table for products
W = liquid density 9.84 lb/gal
D = Tank diameter ft. for an 80 M bbl tank

Loss = 0.943 x 5000 x 0.0015 x 9.84/110 = 0.633 lb/hr.

Adjustment for emissions from tank support columns 1.1 x 0.633 = 0.696 lb/hr

The liquid is 12% (wt) Sodium Sulfide therefore short term emissions are 0.12 x 0.696 = 0.08 lb/hr.

On an annual basis the thruput is 480,000 bbls/yr therefore the loading loss is 480000/5000 x 0.08 = 7.7 lb/yr or 0.004 tons/yr of Sodium Sulfide.

From the computer printout the tank standing losses are 112 lb/yr of which the Sodium Sulfide is 0.85 mole % (vapor) or approximately 1.00 lb/yr, or <0.001 tons/yr.

The annual tank loss is therefore approximately 0.005 tons/yr.

PHOENIX ENGINEERING INC.
8866 Gulf Freeway, Suite 500
Houston, Texas 77017

LOADING EMISSIONS CALCULATION SHEET (Rev. 12/96)

CLIENT:	ITC	**DATE :**	04/25/00
LOCATION:	DEER PARK TERMINAL	**JOB NO:**	2138
			2138LOADLOSS.XLS

AP-42, FOURTH EDITION SEP. 85, EQUATIONS 4.4-(1)

12% WT IN LIQUID = 0.85M% IN VAPOR

CONTAINER DATA		
TYPE OF CARGO CONTAINER LOADED	BARGE	
CONTROL DEVICE	NONE	
EFFICIENCY OF CONTROL DEVICE, EFFCD		0 %
VAPOR COLLECTION EFFICIENCY, EFFVC		0 %
PRODUCT DATA	12 WT %	
MATERIAL LOADED	SODIUM SULFIDE SOLUTION	
LIQUID DENSITY, LD (#/GAL)		9.84
MOLECULAR WEIGHT, M		18.51
AVERAGE ANNUAL LOADING TEMPERATURE (°F), T_{AV}		70.00
VP AT LOADING TEMP, (psia), P_{AV}	SEE J66	0.36
MAXIMUM HOURLY LOADING TEMPERATURE (°F), T_{MAX}		89.00
VP AT MAX LOADING TEMP, (psia), P_{MAX}	SEE J66	0.40
LOADING DATA		
QUANTITY LOADED IN BBLS, VB	ENTER BY CTL-L ONLY	480000
QUANTITY LOADED IN GALLONS, V	or ENTER BY CTL-L ONLY	20160000
LOADING RATE, LR (BBLS/HR)	ENTER BY CTL-L ONLY	5000.00
SATURATION FACTOR, S (SEE TABLE BELOW)		0.5

SATURATION TABLE

TANK TRUCKS & RAIL TANK CARS-	SUBMERGED LOADING	
	OF A CLEAN CARGO TANK	0.50
	DEDICATED NORMAL SERVICE	0.60
	DEDICATED VAPOR BALANCE SERVICE	1.00
TANK TRUCKS & RAIL TANK CARS-	SPLASH LOADING	
	OF A CLEAN CARGO TANK	1.45
	DEDICATED NORMAL SERVICE	1.45
	DEDICATED VAPOR BALANCE SERVICE	1.00
MARINE VESSELS-	SUBMERGED LOADING ONLY	
	SHIPS (OTHER THAN GASOLINE AND CRUDE OIL)	0.20
	BARGES " " " " " "	0.50
DRUMS	DIP TUBE FILLING	0.50
	SPLASH FILLING	1.45

LL (#) = 12.46 x S x P x M /(460+T) x V/1000 x (1-EFFVC/100 x EFFCD/100)

	LBS/YR	TONS/YR	LBS/HR
VOC TOTAL AND AVERAGE EMISSION RATE	1557.18	0.779	16.221
VOC MAXIMUM HOURLY EMISSION RATE	VOC PLUS WATER		17.644

Calculations

Na_2S = 7-12% of Solution in Water (wt)

Vp of water @ 70°F 0.363 psi

* from notes the Vp of the Na_2S is less than 5 mm Hg (use 5 mm

	Use 12% wt	MW	moles	liq mole %
Na_2S	0.12	× 78	.154	3.1
H_2O	0.88	× 18	4.889	96.9
			5.043	

	liquid mfraction		Vp psi		Pp		mole fraction Vapor		MW	
Na_2S	0.031	×	0.097	=	0.003	=	0.0085	×	78	0.663
H_2O	0.969	×	0.363		0.352		0.9915	×	18	17.85
					0.355					18.51

Vapor MW

Loading Losses

0.779 tons/yr × 0.0085 = 0.007 tons/yr

17.644 lb/hr × 0.0085 = 0.15 lb/hr

FLOATING ROOF TANK VOLATILE ORGANIC COMPOUND EMISSIONS

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CLIENT: ITC DATE: 36641.414

LOCATION: DEER PARK TERMINAL JOB: 2138

FILE: 2138TANKEMISS.XLS

TANK PHYSICAL DATA		
TANK IDENTIFICATION NUMBER	TK80-2	
FLOATING ROOF TYPE	IFR	
TANK DIAMETER (FT), D		110
TANK HEIGHT (FT), H		48
TANK CAPACITY (BBLS), VT		81312
DECK SEAM LOSS FACTOR, KsubD (0.0 WELDED, 0.34 BOLTED)	STEEL	0
DECK SEAM LENGTH FACTOR, SsubD		0.14
WIND SEAL FACTOR, KsubS	VAPOR MTD SEC	2.2
SEAL WIND SPEED EXPONENT, 0 FOR IFRs, N		0
*** Note: No procedure for estimating external roofs exists ***		
*** Enter FsubF, NsubC, FsubC values as 0 for external roofs ***		
EXACT TOTAL DECK FITTING FACTOR- IF KNOWN ENTER HERE ==>		ESTIMATED
FsubF		753.17
EXACT NUMBER OF COLUMNS- IF KNOWN ENTER HERE ==>		ESTIMATED
NsubC		7
EFFECTIVE COLUMN DIA., IN FT., (perm/pi), FsubC		1
WEATHER DATA	HOUSTON	
WIND VELOCITY, MPH, V		7.6
STORAGE TEMP. (DEG. F)		68.9
AVG. ATM. PRESS. (PSIA), PsubA		14.7
PRODUCT PHYSICAL DATA	12 WT %	
MATERIAL STORED	SODIUM SULFIDE SOLUTION	
MOLECULAR WT. (#/#MOLE), MsubV		18.51
LIQIUD DENSITY (#/GAL), WsubL		9.84
VAPOR PRESS. AT STG. TEMP. (DEG. F), P		0.355
VAPOR PRESSURE FUNCTION, Pstar		0.0061114
PRODUCT FACTOR, KsubC (CRUDE .65, OTHER 1.0)		1
SHELL CLINGAGE FACTOR, C (CRUDE .006, OTHER .0015)		0.0015
THROUGHPUT DATA		
TANK THROUGHPUT (BBLS FOR DAYS IN SERVICE), Q		480000
EMPTYING RATE (BPH), ER		5000
DAYS IN SERVICE, DsubS		365
NUMBER OF TURNOVERS FOR DAYS IN SERVICE, NT		5.9031877

VOLATILE ORGANIC COMPOUND	RIM SEAL	DECK WITHDRAWAL	DECK FITTING	SEAM	TOT
# FOR DAYS SERVICE =	27.376	64.6010801	85.2006	0	177.17736
TONS FOR DAYS SERVICE =	0.0137	0.03230054	0.0426	0	0.0885887
ANNUALIZED POUNDS =	27.376	64.6010801	85.2006	0	177.17736
ANNUALIZED TONS =	0.0137	0.03230054	0.0426	0	0.0885887
POUNDS/HR (AVG) =	0.0031	0.00737455	0.00973	0	0.0202257
MAX EMIS. RATE (#/HR) =	0.0031	0.67292792	0.00973	0	0.6857791

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Exemption §106.261 Checklist
(Previously Standard Exemption 106)
Facilities (Emission Limitations)
This exemption requires registration with a PI-7-261

The following checklist has been developed to help you confirm that you meet the requirements of Exemption §106.261, previously Standard Exemption 106. **Any "no" answers indicate that the claim of exemption may not meet all the requirements for the use of Exemption §106.261.** If you do not meet all the requirements, you may alter the project design/operation in such a way that all the requirements of the exemption are met or obtain other authorization (i.e. construction permit, standard permit, etc).

YES	NO	NA	DESCRIPTION
X	_		Have you included a description of how this exemption claim meets the general rule for the use of exemptions? (A §106.4 checklist is available to satisfy this demonstration.)
X	_		Have you reviewed all other exemptions to ensure that none would have authorized the proposed construction or change had all the requirements of the exemption been met?
X	_		Is each emission source located at least 100 feet from any recreational area, residence, or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?
_	_	X	Are the new or increased emissions, including fugitives, for each chemical listed in Exemption §106.261(3) less than or equal to 10 tons per year?
_	_	X	Are the new or increased emissions, including fugitives, for each chemical listed in Exemption §106.261(3) less than or equal to 6 pounds per hour.
_	_	X	Are all new or increased emissions less than or equal to one (1) pound per hour for any chemical shown in Table 262 or the 1997 ACGIH TLV list and having an L value or TLV of 200 mg/m^3 or more? (Emissions from compounds with a limit value of less than 200 mg/m^3 are not allowed under §106.261.) (List chemicals and attach calculations.)
X	_	_	Are all new or increased emissions less than or equal to one (1) pound per hour for any other chemical not listed or referenced in Table 262?
X	_	_	For physical changes or modifications to existing facilities, does all air pollution abatement equipment remain unchanged (i.e., no change or addition is allowed)? (This requirement does not mean that new facilities may not have control equipment.)
X	_	_	Will all visible emissions, except uncombined water, have opacity less than or equal to 5 percent in any five-minute period?
_	_	X	If the project emissions are 5 tons per year or more, has a PI-7-261 form been completed and submitted within 10 days of the installation or change.
X	_	_	If the project emissions are less than 5 tons per year, has a PI-7-261 form been completed and submitted within 10 days of the installation or change.
			Are the following included with the notification form:
X	_		description of the project?
X	_		emission calculations?
X	_		data identifying specific chemical names (MSDS, CAS number, etc.)?
X	_	I LB/HR	limit values? and
X	_	NONE	description of control equipment, if any?

Revised 1/99

SUBCHAPTER K : GENERAL

§106.261. Facilities (Emission Limitations) (Previously SE 106).

Facilities, or physical or operational changes to a facility, are exempt provided that all of the following conditions of this section are satisfied.

(1) This section shall not be used to authorize construction of or any change to a facility authorized in another section of this chapter (see §106.262(1) of this title (relating to Facilities (Emission and Distance Limitations) (Previously SE 118)). **THIS SECTION IS NOT USED TO AUTHORIZE CONSTRUCTION ETC. AUTHORIZED IN ANOTHER SECTION OF THIS CHAPTER**

(2) The facilities or changes shall be located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located. **THERE ARE NO RECREATIONAL AREA ETC. LOCATED LESS THAN 100 FT FROM THE FACILITIES**

(3) Total new or increased emissions, including fugitives, shall not exceed 6.0 pounds per hour (lb/hr) and ten tons per year of the following materials: acetylene, argon, butane, crude oil, refinery petroleum fractions (except for pyrolysis naphthas and pyrolysis gasolines) containing less than ten volume percent benzene, carbon monoxide, cyclohexane, cyclohexene, cyclopentane, ethyl acetate, ethanol, ethyl ether, ethylene, fluorocarbons Numbers 11, 12, 13, 14, 21, 22, 23, 113, 114, 115, and 116, helium, hydrogen, isohexane, isopropyl alcohol, methyl acetylene, methyl chloroform, methyl cyclohexane, neon, nonane, oxides of nitrogen, propane, propyl alcohol, propylene, propyl ether, sulfur dioxide, alumina, calcium carbonate, calcium silicate, cellulose fiber, cement dust, emery dust, glycerin mist, gypsum, iron oxide dust, kaolin, limestone, magnesite, marble, pentaerythritol, plaster of paris, silicon, silicon carbide, starch, sucrose, zinc stearate, or zinc oxide. **N/A**

(4) Total new or increased emissions, including fugitives, shall not exceed 1.0 lb/hr of any chemical having a limit value (L) greater than 200 milligrams per cubic meter (mg/m^3) as listed and referenced in Table 262 of §106.262 of this title or of any other chemical not listed or referenced in Table 262. Emissions of a chemical with a limit value of less than 200 mg/m^3 are not allowed under this section. . **THE EMISSION RATE OF SODIUM SULFIDE IS LESS THAN 0.25 LB/HR. SODIUM SULFIDE IS NOT LISTED OR REFERENCED IN TABLE 262**

(5) For physical changes or modifications to existing facilities, there shall be no changes to or additions of any air pollution abatement equipment. **THERE ARE NO CHANGES**

(6) Visible emissions, except uncombined water, to the atmosphere from any point or fugitive source shall not exceed 5.0% opacity in any five-minute period. **VISIBLE EMISSIONS WILL NOT EXCEED 5.0% OPACITY IN ANY FIVE MINUTE PERIOD.**

Adopted February 19, 1997 Effective March 14, 1997

MERICHEM COMPANY
4800 Texas Commerce Tower
Houston, Texas 77002-3068
24 Hr Emergency: 713/455-1311
CHEMTREC: 800/424-9300

A. PRODUCT INFORMATION

Product Code:	SSREF
Common Name/Synonyms:	Sodium Sulfide (aqueous) (<100% Sulfidity)
Chemical Name(s):	Sodium Monosulfide
DOT Shipping Name/ID No.:	Corrosive Liquid N.O.S. (Sodium Sulfide Solutions)/UN1760
HMIS Rating:	Health-2 Flammability-0 Reactivity-0 Least-0; Slight-1; Moderate-2; High-3; Extreme-4;
Product Appearance/Description:	A colorless, amber or brown liquid with a characteristic hydrogen sulfide stench. Corrosive to all body tissues. May be fatal if swallowed. Harmful if inhaled. Contact with mineral acid liberates toxic gas (Hydrogen Sulfide). Shipments may contain a small upper layer of hydrocarbon with a flash point of 50°F or lower.

B. FIRST AID INFORMATION

FIRST AID - CONSULT PHYSICIAN PROMPTLY IN ALL CASES

Eye Contact:	Immediately flush the eyes with plenty of running water, including under the eyelids, for at least 15 minutes.
Skin Contact:	Immediately wash from the skin by removing contaminated clothing and flushing the exposed area with plenty of water and soap.
Inhalation:	Remove to fresh air. Have qualified person restore and/or support breathing with oxygen, if needed. Keep warm.
Ingestion:	Quickly give 3 or more glasses of milk or water to drink.

NOTE TO PHYSICIAN
No specific antidote is known. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical conditions.

C. HEALTH HAZARD DATA

This material is not listed as a carcinogen by IARC, NTP or OSHA.

This material meets the following health hazard definition(s) according to the OSHA Hazard Communication Standard (29 CFR 1910.1200):

[illegible]

Component	CAS No.	Approx. Wt. %	Exposure Guidelines OSHA PEL (ppm)	ACGIH TLV mg/m³
Sodium Sulfide	1313-82-2	7-12	Not Established	
Sodium Hydroxide	1310-73-2	0-5	2(c)*	
Water	7732-18-5	88-93	Not Established	

*(c) = Ceiling

[illegible]

Flash Point:	None; shipments may contain a small upper layer of hydrocarbon with a flash point of 50°F or lower.
Explosive Range in Air; % by Vol.	
- Lower:	None
- Upper:	None
Fire Extinguish. Media:	Not Pertinent
Special Fire Fighting Procedures:	Not Pertinent
Fire and Explosion Hazards:	Container rupture may occur under fire conditions.

[illegible]

Stability:	Stable
Conditions to Avoid:	Contact with mineral acid will release toxic and flammable Hydrogen Sulfide (H_2S) gas.
Incompatibility (Materials to Avoid):	Strong oxidizing agents
Hazardous Polymerization:	Not known to occur
Hazardous Decomposition Products:	Toxic and flammable hydrogen sulfide gas is produced when material is heated to decomposition.

[illegible]

Appearance:	Amber, Brown Liquid
Odor:	Hydrogen Sulfide Stench (rotten eggs)
Odor Threshold:	<1 ppm
pH:	>11.0
Boiling Point:	approx. 220°F (approx. 104°C)
Freezing Point:	approx. 33°F (approx. 0.5°C)
Reid Vapor Pressure:	Not Applicable
Specific Gravity:	1.15-1.18 @ 60°F/60°F
Vapor Density (Air=1):	approx. same as water
Solubility in Water:	Infinite
Coefficient of Octanol/ Water Separation:	Not Available

This material is FOR INDUSTRIAL USE ONLY.

The information on this form is furnished solely for the purpose of enabling those who transport, handle or use our products to ensure the safety and health of their employees and to comply with various laws and regulations (federal, state and local). This information is offered in good faith and is believed to be accurate. Merichem, however, makes no guarantee or warranty, expressed or implied, regarding the accuracy of these data or the results to be obtained from the use hereof.

D. HAZARD DESCRIPTION

_____	Highly Toxic	X	Corrosive
_____	Toxic	X	Irritant
_____	Non-Hazardous	_____	Sensitizer

Target Organ Toxin: Lungs, skin, eyes, and central nervous system.
Route(s) of Exposure: Absorption of liquid, mist or vapor on skin; eye contact; inhalation of mist or vapor; oral ingestion

SYMPTOMS AND HEALTH EFFECTS OF ACUTE OVEREXPOSURE
Swallowing this material causes intense burning of the mouth and throat, followed by abdominal pain and nausea; these effects may be delayed.

Inhalation of mist causes irritation of respiratory tract and possible systemic poisoning; hydrogen sulfide gas which may be given off when acid is present, causes headache, dizziness, nausea, vomiting; continued exposure can lead to loss of consciousness, respiratory failure and death.

Liquid causes marked eye irritation, itching, lacrimation, swelling and corneal damage, blurring of vision and increased sensitivity to light. Contact with liquid on skin causes irritation and corrosion of tissue; continued exposure may cause dermatitis, chemical burns and temporary loss of hair at site of contact.

E. HANDLING AND STORAGE PRECAUTIONS

Avoid contact with eyes, skin or clothing.
Avoid breathing vapors, mists or spray.
Do not take internally.
Use with adequate ventilation.
Use respiratory protection when overexposure to vapors, mists or spray is possible.
When handling, wear chemical splash goggles, face shield, heavy PVC or butyl rubber gloves and protective clothing.
Keep containers closed.
Store containers in cool, well ventilated areas away from ignition sources.
Avoid use of aluminum, copper and brass alloys in contact with this material in storage and process equipment.

F. PERSONAL PROTECTION INFORMATION

Ventilation: Use adequate ventilation to control exposure to below recommended levels.
Respiratory Protection: Use NIOSH/MSHA approved air supplied respirator.
Eye Protection: Wear chemical safety goggles and a full face shield to protect against splashing.
Skin Protection: Wear chemical resistant gloves when handling this material. Heavy PVC or butyl rubber is recommended. Gloves may be decontaminated by washing with soap and water.

[illegible]

Other Protective Clothing and Equipment: Impervious protective clothing and chemically resistant footwear should be worn to minimize contact.

[illegible] PROCEDURE

Evacuate area.
Shut off ignition sources.
Only properly trained personnel should respond to spills or leaks.
Wear protective equipment and/or garments as specified in Section E.
When entry must be made into an area where the concentration is unknown, use NIOSH/MSHA approved self-contained breathing apparatus (SCBA) and protective equipment as described in Section E.
Absorb spilled liquid onto inert material and transfer into disposal drums.
Large spills should be removed using a vacuum truck.
Wash spill area with water and absorb onto inert material and transfer into disposal drums.
Spills on areas other than pavement, e.g., dirt, sand, etc., may be handled by removing the affected soils and placing in approved containers.

WASTE DISPOSAL
The materials resulting from clean-up operations of a spill may be hazardous and, therefore, subject to specific regulations. Package, store, transport and dispose of all clean-up materials and any contaminated equipment in accordance with all applicable federal, state and local regulations. Shipments of waste materials may be subject to manifesting requirements per applicable regulations. Appropriate disposal will depend on the nature of the waste and should be performed by competent and properly permitted contractors. Ensure that all responsible federal, state and local agencies receive proper notification of spill and disposal methods.

Spills or releases should be reported, if required, to the appropriate local, state and federal regulatory agencies.

The Reportable Quantity (RQ) of this material is 20,000 lbs. (2,033 gallons) based on Sodium Hydroxide concentration.

MATERIAL REPORTABLE UNDER TITLE III, SECTION 313
The following substance(s) are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372. The substances(s) may not be reflected in Section C or G of this MSDS.

Substance	CAS No.	Approx. Wt.%
Sodium Sulfide	1313-82-2	7-12
Sodium Hydroxide	1310-73-2	0-5

Product and/or components entered on EPA's TSCA inventory: YES