Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Cat Cracked Distillate, Heavy

Product Use: Refinery stream
Product Number(s): CPS280100, CPS286100
Synonyms: FCC Heavy Cycle Oil, Heavy Cycle Oil
Company Identification
Chevron Products Company
Marketing, MSDS Coordinator
6001 Bollinger Canyon Road
San Ramon, CA 94583
United States of America

Transportation Emergency Response
CHEMTREC: (800) 424-9300 or (800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
MSDS Requests: (800) 689-3998

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Distillates (petroleum), heavy catalytic cracked	64741-61-3	100 %weight

SECTION 3 HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW

- COMBUSTIBLE LIQUID AND VAPOR
- MAY CAUSE RESPIRATORY TRACT IRRITATION IF INHALED
- CANCER HAZARD - CAN CAUSE CANCER
- MAY CAUSE DAMAGE TO:
- LIVER
- BLOOD/BLOOD FORMING ORGANS
- HARMFUL TO AQUATIC ORGANISMS. MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

****

IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if

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6. <u>Process Safety Information (PSI) and Process Safety Hazards (PHA) for FCC "fractionator bottom system" cleaning and "turnaround".</u>

Attachment 6B – MSDS for Heavy Cat Cracked Distillate

DATA AND OPERATING LIMITS SHEET - VESSELS

EQUIPMENT DATA

SERVICE Slurry Strainer NO. V-102B
MFR. Dallas Tank Company Inc. SET Vertical
MFR. SERIAL NO. 10015 YEAR BUILT 1958 1996 ②
REFINERY EQUIP. NO. D-3806B ORDER NO. 5853-42-027 [illegible]
ASSEMBLY DWGS. A-157358 DESIGN SHEET NO. E-157439
APPLICABLE CODE & EDITION ASME 1956 SEC VIII

SHELL				HEADS			
MATERIAL SA-357 (5 Cr ½ Mo)				MATERIAL SA-357			
SHELL SECTION	O.D.	NOM. THICK.	LENGTH	HEAD	O.D.	*MIN. THICK.	FORM
	36"	.375	4'-0"	Top & Bott.	36"	.375	2:1 S.E.

LONG SEAM: TYPE Dbl. Butt-Weld E 100 % SEAM IN HEAD None E 100 %
STRESS RELIEF Yes X-RAY Yes 100% *Min. thickness ~~measured~~ after forming. (Assumed)
MAX. ALLOW. PRESS. NEW (NO CORROS.) ~~300~~ 295 psig @ ~~100~~ 60 F
LIMITED BY Shell
TESTS NEW: SHOP 450 psig Horiz. position. FIELD psi at top position
TRAYS or : No., Mat'l. & Drwg. No.
PACKING : Size, Height & Mat'l.
LINING : Thick., Mat'l. and
Method of attachment
INSULATION: Thick., & Type 2" Block
SPECIAL DESIGN CONSIDERATIONS OR
UNUSUAL CONSTRUCTION FEATURES

SET MPT @ 40°F WCNC 8/85 MAWP 8/85

OPERATING LIMITS

(CONSULT DESIGNS ENGINEER BEFORE CHANGING THESE LIMITS)

DESIGN PRESSURE, at top ~~135~~ 245 ② psig @ ② 725 ~~700~~ F SAFE FOR FULL VACUUM: Yes
BASED ON
PROTECTED BY SAFETY VALVE ON E-102A S.V. SET AT ~~130~~ SEE E-102A ① psi
TEST PRESSURE, at top ~~378~~ ~~302~~ ② psig

MINIMUM THICKNESSES
Based on indicated design pressure and temperature, test pressure, wind load, or other governing consideration.

SHELL SECTION	t_m	c	BASED ON:
	~~.190~~ 0.3509	~~.185~~ 0.0446	~~135 psi.~~ 245 ②
	0.3294	0.0476	
HEADS:	~~.100~~	~~.195~~	~~155 psi.~~ 245

*135 psi - 5 psi press. drop in line

SAFETY PRECAUTIONS

REFER TO GENERAL SAFETY INSTRUCTION SHEETS ME-5102 Sheets 1 to 3, and 10 to 12, FOR NOTES ON HAZARDS OF EQUIPMENT FAILURE, WITH RECOMMENDATIONS FOR THEIR AVOIDANCE AND FOR INSPECTIONS AND TESTS.

NOTE BELOW ANY SPECIAL HAZARDS, RECOMMENDATIONS, INSPECTIONS OR TESTS THAT ARE IMPORTANT FOR THE ABOVE EQUIPMENT.

① MPT SET @ 40°F WCNC 8/85
② RERATE MAWP - FCC MODERNIZATION 12/95 RWC

APPROVALS
ENG. DEPT.
OPRG. DEPT.

DATE 12-28-58
DR. R.E.D.
CK. W.R.M.
ENGR.

SAFETY INSTRUCTION SHEET
VESSELS
Richmond (Refinery) No. 1 FCC Plant (Plant)

DWG. NO. E-157971
Sheet 30 of 188

MFG. 600-5 (SC-[illegible])

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RBMI COMPONENT	
Material Spec.	
Material Grade	
Equipment Design Temperature	
Equipment Design Pressure	
Diameter	
Post Weld Heat Treatment Applied	Yes
Joint Efficiency	
Nominal Thickness	
Insulated	Yes
Insulation Type	
Representative Fluid	
Initial Fluid Phase	
Process Service	C-90 Frac Bottoms
Inventory	
Date In Service	
Toxic Mixture	
Toxic Fluid	
Percent Toxic	
Internal Expected Corrosion Rate	
Short Term Corrosion Avg.	
Long Term Corrosion Avg.	
Selected Internal Corrosion Rate	
Internal Corrosion Type	
Predic. Internal Corr. Loc.	
Predic. Internal Corr. Loc. Descrip.	
External Expected Corrosion Rate	
Measured External Corrosion Rate	
Selected External Corrosion Rate	
Susceptible to External Corrosion	
Other Damage Mechanism	
Environ. Cracking Mechanism	

RBMI COMPONENT *(continued)*	
Potential – Environmental Cracking	
Combined Inspection Priority	
Internal Corrosion Priority Number	
Number of Internal Inspections	
Internal Inspection Confidence	
External Corrosion Priority Number	
Environ. Cracking Inspection Priority	
OM Priority	
Production Loss Conseq. Ranking	

RBMI CORROSION STUDY	
Corrosion Allowance	
Internal Corrodent	
Internal Corrodent Concentration	
Internal Corrosion Mechanism	
Pitting Potential	
Internal Lining/Coating	
Water Present	
Percent Water Present	
External Coating	
External Wetting	
Intermittent Service	
Traced	
Tracing Type	
Corrosion Evaluation Comments	
Other Damage Potential	
Other Damage Mech. Prob. Category	
Other Damage Mech. Eval. Comments	
Environ. Cracking Agent	
Environ. Cracking Agent Concentration	
Steam Out	
Environ. Crkg. Mech. Eval. Comments	

COMMENTS SECTION

All CA's based on nominal new thickness, not actuals.

Vessel is insulated and steam traced.

Johnson Screen - 304SS - 3/8" dia holes, 23 1/2" OD x 42" lg

Vessel OAL = 12'-9 1/8", ext supports @ 6' - 6" from bttm nozzle

Empty weight, new, = 3,873 #'s. Test weight new = 8,436 #'s

Vessel capacity new = 498 gal.

36" - 300# WNRFF top ellipsoidal head (597 # new), cone bottom w/6" -300# flg nozzle.

12" - 300# WNRFF inlet and outlet nozzles.

SUBMITTER DATA

Submitter (Name): K.E. Brooks	CAI: keeb	Phone Ext.: 2033	Date: 10/1/05

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CHEVRON
Richmond Refinery

252 DRUMS/VESSEL

Equipment ID (Location ID): V-102 B

UNIT (Plant): 0101

ASSET/LOCATION IDENTIFICATION DATA

Equipment Location ID	
Equipment Location Description	
Location Type	
Location Type Description	
MMS Location Status	
MMS Status Date	
MMS Location Description	
MMS Equipment Component Tag	
Cost Center	RRI00840
Critical?	
ERG?	
Asset ID (UTC Number)	
Asset Description	P-105's Discharge Strainer
Asset Type	
Asset Type Description	
Manufactured By	BENFAB
Model Number	N/A
Serial Number	05-2165-B
Brass Tag	
MMS Asset Status	
Date Fitted	
Vessel Setting	Vertical
Governing Code	ASME B&PV
Code Section	Sec. VIII, Div. 1
Code Edition	2004
Year Built	2005
Equipment Internals	Yes
Special Design Comments	

MATERIAL AND DESIGN

Section Description	Shell
Materials	SA-387-5 CL2N
ID	36"
Code or Nominal Thickness	1/2"
Measured Thickness	
Length or Form	11' - 2 1/16"
Internal Design Pressure	320 psig
Internal Design Press. @ Degrees	750 F

MATERIAL AND DESIGN *(continued)*

T-Min	0.3177"
Corrosion Allowance	0.1823"
Basis for Minimum Thickness	Design

PERFORMANCE AND OPERATING LIMITS

Joint Efficiency	100%
MAWP at Top Internal	320 psig
MAWP at Top Internal Temp.	750 F
MAWP At Top External	-7.5 psig
MAWP at Top External Temp.	450 F
Max. Ext. Press. (Steam Out)	- 7.5 psig
Max. Ext. Steam Out Temp.	450 F
Max. Allowable Operating Temp.	320 psig
Max. Allow. Oper. Temp. Limited By	Design
Minimum Pressurizing Temp.	60 F
Low Metal Temp. Pressure Limit	320 psig

TEST INFORMATION

Test Pressure New	419.0 psig
Field Test Press. Top of Vessel	413.5 psig
Radiographically Tested?	100%
Reason for Radiographic Test	Material
Post Weld Heat Treatment?	Yes
Reason for PWHT	Material Rqd.

DOCUMENTATION

Chevron Specification	
Chevron Design/Data Sheet Number	
Purchase Order Number	S.O. # 0015003858
Safety Precautions	
Documentation Remarks	
Manufacturer Assembly Drawings	B05-2165, sht 1-6
Chevron Assembly Drawings	
Shop or Field Tested?	Shop

RBMI IDENTIFICATION

Construction Code	
External Area Humidity	
Internal Entry Possible	
Detection Time	
Isolation Time	

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6. <u>Process Safety Information (PSI) and Process Safety Hazards (PHA) for FCC "fractionator bottom system" cleaning and "turnaround".</u>

PSI Information:

Attachment 6A – Safety Information Sheet (SIS) for V-102-B

Note: The information on page 3 of attachment 6A is no longer applicable; the vessel no longer exists. The information is retained for reference only.